

Scott Brown

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CERCLA COMPLIANCE WITH OTHER LAWS MANUAL

VOLUME III

CLEAN AIR ACT AND OTHER ENVIRONMENTAL STATUTES

Office of Emergency and Remedial Response
Policy and Analysis Staff

Office of Solid Waste and Emergency Response

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VOLUME III
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INTRODUCTION AND OVERVIEW

INTRODUCTION

This volume addresses CERCLA compliance with applicable or relevant and appropriate requirements (ARARs) under the Clean Air Act and other environmental statutes for remedial actions. The purpose of the Manual is to inform CERCLA Remedial Project Managers (RPMs) of how to ensure that remedial action alternatives identify and comply with ARARs.

Under CERCLA § 121, remedies selected at Superfund sites must be protective of human health and the environment and must comply with ARARs.¹ Remedies conducted entirely on-site are not required to obtain Federal, State or local permits. This permit exemption covers Federal, State, or potentially responsible parties undertaking on-site response actions under CERCLA §§ 104, 106, 120, or 122. On-site remedies must comply with substantive requirements, but do not need to comply with the administrative and procedural requirements associated with the permitting process. On-site response actions covered by the permit exemption include any activities occurring on-site prior to the response action (e.g., activities during the RI/FS). The draft proposed NCP defines "on-site" as the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action. The reason for the permit exemption is to preserve flexibility and avoid lengthy time-consuming procedures when developing and implementing remedial alternatives.

CERCLA actions involving the transfer of hazardous substances or pollutants or contaminants off-site must comply with applicable Federal and State substantive requirements and are not exempt from formal procedural and administrative permitting requirements.

CERCLA § 121 also requires compliance with State environmental standards. This manual will not discuss in depth each State's standards. However, this volume will note when State standards, promulgated pursuant to a Federal statute or Agency policy being discussed, could be more stringent than Federal standards.

¹ The requirements of CERCLA § 121 generally apply as a matter of law only to remedial actions. However, as a matter of policy, EPA will attain ARARs to the greatest extent practicable considering the exigencies of the site when carrying out removal actions.

SCOPE AND ORGANIZATION OF VOLUME III

This volume, Volume III, describes general procedures for CERCLA compliance with applicable or relevant and appropriate requirements in environmental and public health statutes, programs, and policies that are not covered in Volumes I and II (RCRA, SDWA, CWA, and ground-water policies). This volume covers the Clean Air Act (CAA), Toxic Substances Control Act (TSCA), and Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and several other statutes with potential ARARs. Volume III is organized as follows:

- o Chapter 1 provides guidance for compliance with Clean Air Act requirements;
- o Chapter 2 provides guidance for compliance with statutes that address toxics, pesticides, and low-level radioactive wastes, i.e., TSCA, FIFRA, and the low-level radioactive waste standards program;
- o Chapter 3 provides guidance for compliance with other resource protection statutes. These statutes generally cover specific concerns or areas, e.g., endangered species, coastal zones, and historic preservation.
- o Chapter 4 provides guidance for compliance with statutes with standards for mining, milling, or smelting sites.
- o Chapter 5 provides guidance for compliance with miscellaneous environmental protection statutes that may have requirements related to CERCLA clean up actions. These statutes cover regulations for the protection of workers and for the transportation of hazardous wastes.

GUIDANCE FOR COMPLIANCE WITH CLEAN AIR ACT REQUIREMENTS

1.0 OVERVIEW OF THE CLEAN AIR ACT

This chapter addresses CERCLA compliance with Clean Air Act (CAA) requirements. The objective of the Clean Air Act (CAA) is to protect and enhance the quality of the nation's air resources so as to promote the public health and welfare and the productive capacity of the population. This objective is achieved through the control of emissions into the air. Controls are implemented on stationary and mobile sources through combined Federal, State, and local programs.

1.0.1 Regulated Pollutants and Standardso Criteria Pollutants

Pursuant to CAA § 109, EPA promulgates national ambient air quality standards (NAAQS) (see Exhibit 1). The attainment and maintenance of these primary and secondary standards are required to protect the public health (allowing an adequate margin of safety) and the public welfare, respectively. EPA has promulgated NAAQS for the following pollutants: particulate matter less than 10 microns particle size (PM₁₀), sulfur dioxide, carbon monoxide, ozone (which results from the photochemical oxidation of volatile organic compounds), nitrogen dioxide, and lead.

o Hazardous Air Pollutants

Pursuant to CAA § 112, pollutants are identified for which no ambient air quality standard is applicable but that cause or contribute to air pollution which may reasonably be anticipated to result in an increase in mortality or in serious irreversible, or incapacitating reversible, illness. EPA first "lists" a pollutant as hazardous and then may establish emission standards for source types that emit that pollutant, known as national emissions standards for hazardous air pollutants (NESHAP). NESHAPs have been defined for specific source types (i.e., industrial categories) emitting the following pollutants: arsenic, asbestos, benzene, beryllium, mercury, radionuclides, and vinyl chloride. Coke oven emissions has also been listed as a hazardous air pollutant but its NESHAP has not yet been finalized.

o Designated Pollutants

Under CAA § 111, EPA also promulgates new source performance standards (NSPS) for certain classes of new stationary sources of air pollution. The NSPS limit the emissions of a number of different pollutants including the six criteria pollutants and the following: fluorides, sulfuric acid mist, hydrogen

sulfide, total reduced sulfur, and reduced sulfur compounds (including H₂S).¹ NSPS are standards for new sources (i.e., industrial categories) of air emissions.

1.0.2 Air Pollution Problems at Uncontrolled Hazardous Waste Sites

Air pollution problems at uncontrolled waste sites are usually the result of gaseous emissions or fugitive dust.² Gases may be emitted by the vaporization of liquids, venting of entrained gases, or by chemical and biological reactions with solid and liquid waste material. Volatile organics may be released slowly but continuously from surface impoundments or landfills. Methods for controlling the release of gaseous emissions to the atmosphere include covers for control of volatile emissions from impoundments and active gas collection systems for collection and control of gases generated in landfills.

Fugitive emissions of particulate matter may result from wind erosion of exposed waste materials or cover soil. Commonly used measures for controlling fugitive dusts from inactive waste piles and active cleanup sites include use of chemical dust suppressants, wind screens, water spraying and other dust control measures commonly used during construction.

Although many of these sources of gaseous emissions and fugitive dust may be subject to Federal or State regulations, the methods for controlling these emissions generally are not considered sources of emissions subject to CAA requirements. However, control devices and some cleanup activities that increase the amount or change the type of emissions, e.g., flares or excavation, may be considered sources subject to CAA requirements.

1.0.3 Sources of Air Emissions During Superfund Cleanup Actions

Examples of common activities that may be performed during a Superfund cleanup action and that may be considered sources of air emissions because they may result in emissions that otherwise would not be present, include the following:

- o Air stripping (used to volatilize contamination both in ground water and in soil);

¹ Pollutants for which NAAQSs have not been promulgated but which are regulated under the CAA under NESHAPS or NSPS are referred to as noncriteria pollutants.

² Fugitive emissions means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

- o Thermal destruction, e.g., incineration (may involve emissions through volatilization of organic contaminants and emissions through volatilization or suspension of particulate matter into the stack gases);
- o Handling of contaminated soil, including loading, unloading, and transfer operations (digging and relocating of soil can lead to volatilization of organic contaminants and wind entrainment of particulates);
- o Gaseous waste treatment, e.g. flaring (used, for example, when capping and venting a site, usually abandoned or inactive landfills).

1.1 NATIONAL AMBIENT AIR QUALITY STANDARDS

The primary and secondary standards for criteria pollutants (i.e., NAAQS) are identified at 40 CFR Part 50 (see Exhibit 1). The NAAQS for some criteria pollutants include both short-term and long-term averaging times (e.g., 24-hour and annual standards for sulfur oxides). These standards are not source-specific emissions limitations but rather are limitations on ambient concentrations intended to protect health and welfare. Under CAA § 107, each state has the primary responsibility for assuring that NAAQS are achieved and maintained within each State.

Section 110 of the CAA requires each state to adopt and submit for EPA approval a plan for the implementation, maintenance and enforcement of the NAAQS. EPA approves a State Implementation Plan (SIP) or portion thereof when it meets the requirements of CAA § 110(a)(2). Upon EPA approval, the SIP becomes Federally enforceable. Thus, State requirements can become Federal requirements by virtue of the SIP approval process. Moreover, States may delegate authority to local air programs to implement SIP requirements. These local air program requirements are considered Federally enforceable.

1.1.1 Pre-Construction Review

In general, new and modified stationary sources of air emissions must undergo a pre-construction review in order to determine which CAA requirements apply. The purpose of this review is to issue a permit authorizing construction of the source. Although CERCLA § 121(e) exempts on-site remedial activities from obtaining permits, the substantive requirements and conditions that otherwise would be included in the permit must be identified and complied with by the RPM (see section 1.1.3 below for a description of suggested coordination between Superfund and Air offices to determine these requirements).

Pre-construction reviews are conducted by EPA, the State or the local air pollution control agency (40 CFR §§ 51.160 through 51.164). The review

determines whether the construction or modification of any stationary source will result in violations of the SIP's overall approved control strategy or will interfere with attainment or maintenance of NAAQS. The scope and extent of the review, including the level of control required and possible exemptions for de minimis emissions, varies according to State or Federally enforceable local requirements. Examples of pollution controls that may be required for CERCLA activities include vapor recovery on air strippers, controls on emissions of particulates from incinerators, controls on fugitive dust sources, etc. Some State or Federally enforceable local agencies may require some version of best available control technology (BACT) on particular types of sources of emission.

Whether NESHAPS and/or NSPS will apply to the proposed source (see section 1.2 and 1.3 below) are also determined as a part of this review. Further during this review, the State or local agency with authority delegated by the State may impose requirements related to emissions of toxic air pollutants regulated by the State (i.e., hazardous air pollutants not regulated under NESHAPS, see section 1.5 below) to determine whether other requirements will apply.

The pre-construction review will also determine whether any other permitting programs (see next section) under the CAA will apply to the CERCLA activity.

1.1.2 Other permit review processes

Depending on the amount of emissions per year and the location of the source of air emissions, other permits may be required (or their substantive requirements identified and complied with for on-site activities). These permit programs apply to "major" sources of air emissions. The aggregate of all source emissions at a CERCLA site are considered when determining whether the site is a major source. Generally, it is not anticipated that emissions from CERCLA activities would qualify as "major" (see sections 1.6 and 1.7 below for EPA definitions of major sources under the CAA). These permit programs are as follows:

- o Major source permit - applies to all new major sources and major modifications as defined in State or Federally enforceable local regulations. This program provides that a permit will not be issued unless the source would not significantly contribute to an existing violation.
- o PSD permit - applies to new major stationary sources and major modifications in areas designated in attainment of the NAAQS. Under the Federal PSD program (see section 1.6 below), a CERCLA site would not be considered a major source unless emitting 250 tons or more per year of any regulated pollutant. State or Federally enforceable local regulations may have different tons per year thresholds for applying PSD requirements. PSD requires that the source install and operate the best available control technology (BACT) for certain air

pollutants; ensures that the source will not cause or contribute to violations of the NAAQS or PSD increments (sulfur dioxide and particulates); ensures that the source will not impair visibility or adversely impact soils or vegetation; and ensures that the source will not cause adverse impacts on the air quality-related values of certain wilderness areas and national parks.

- o Nonattainment area permit - applies to new major stationary sources and major modifications in areas designated nonattainment for any of the NAAQS. Under the Federal program (see section 1.7 below), a CERCLA site would not be considered a major source unless emitting 100 tons or more per year of any regulated pollutant. Again, State or Federally enforceable local regulations may have different thresholds. The program requires that the source meet the lowest achievable emission rate (LAER); requires that the source either provide an emission offset or that there be a growth allowance provided in the SIP; and provides that a permit not be issued unless all other sources owned or operated in the State are in compliance with the SIP.
- o Visibility permit - applies to new major stationary sources and major modifications as defined in State or Federally enforceable local regulations. The program requires that the source not have an adverse impact on visibility in certain wilderness areas and national parks and be consistent with making reasonable progress toward the national visibility goal.

The fundamental purpose of these other permit programs is to regulate major sources of air emissions. Therefore, the requirements imposed by these programs are ARAR only when the CERCLA site is a major source.

1.1.3 Coordination Between CERCLA and Air Offices for remedial activities conducted on-site

RPMs will identify ARARs where a treatment technology to be conducted on-site involves potential air emissions. In order to do so correctly and in a timely manner, each EPA Region should establish procedures, protocols, or memoranda of understanding that, while not recreating the administrative and procedural aspects of a permit, ensure early and continuous cooperation and coordination between the Regional Superfund and Air Offices. An Air/Superfund coordinator from the Air program office has been designated in each Region to facilitate cooperation and coordination between the Superfund and Air offices. Moreover, State Superfund and State and local Air program offices may be involved where there is a State-lead action or where the State or local agency

has been delegated new source air permitting authority. Coordination among all appropriate offices should be established. However, the Regional Superfund and Air offices should maintain their involvement in all actions.

It is expected that most remedial air field studies and engineering assessments will be performed by Superfund contractors under the direction of the RPM in coordination with the Air program. The Air program offices' experience in applying standards of control under the CAA to industrial new sources is a valuable resource for Superfund. Air offices can help ensure that Superfund site decisions involving air pollution issues are consistent with air program ARARs. The Air program offices can also be used to review and comment on Superfund work plans and site investigation and cleanup studies, and can also be used for special site field evaluations during removal and pre-remedial actions. In some special circumstances, moreover, Air program contractors can provide assistance to Superfund contractors by consulting in areas such as air modelling, monitoring, and the use and effectiveness of air pollution control devices. Superfund staff should consult with their Air program counterparts early in the planning process to facilitate this cooperative effort.

Another source of information regarding control technologies is the Control Technology Center in Research Triangle Park, North Carolina (Hotline numbers: (919) 541-0800 and (FTS) 629-0800). The Control Technology Center is a mechanism to obtain information regarding types of technologies (e.g., BACT and LAER) that have been used previously to control various kinds of emissions.

1.2 NEW SOURCE PERFORMANCE STANDARDS

Section 111 of the CAA requires EPA to promulgate standards for new sources of air emissions.³ The purpose is to insure that new stationary sources are designed, built, equipped, operated and maintained so as to reduce emissions to a minimum. The CAA requires EPA to promulgate standards for categories of stationary sources which emit particular pollutants that cause, or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare. The emissions control technology on which the new source performance standards (NSPS) are based is the best demonstrated technology (BDT). BDT is the degree of emission limitation achievable through application of the best technological systems of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, any nonair quality health and environmental impacts, and energy requirements) EPA determines has been adequately demonstrated.

Insofar as NSPS are source specific requirements, they are not generally considered applicable to Superfund cleanup actions. However, an NSPS may be considered relevant and appropriate if the pollutant emitted and the technology

³ Many States have the authority to enforce both NSPS and NESHAPS (see section 1.3).

employed during the cleanup action are sufficiently similar to the pollutant and source category regulated by a NSPS. For example, a NSPS exists for particulate emissions from incinerators with a charging rate of 50 tons/day which is used for burning solid waste, more than 50 percent of which is municipal type waste. (40 CFR § 60.50). If a cleanup action involves using an incinerator at a municipal landfill, this NSPS should be evaluated regarding whether it is an ARAR (see Volume I, Chapter 1 for methodology for determining ARARs). The NSPSs are listed in 40 CFR Part 60.

1.3 NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Section 112 of the CAA directs EPA to publish, and periodically revise, a list of hazardous air pollutants for which it intends to establish emission standards, and to establish emission standards for those pollutants. Hazardous air pollutants are those for which no ambient air quality standard is applicable but which causes, or contributes to, air pollution which may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness. The statute directs EPA to establish standards at the level that provides an ample margin of safety to protect the public health from such hazardous air pollutant. The standards are referred to as national emissions standards for hazardous air pollutants (NESHAP), listed in 40 CFR Part 61. NESHAP, like NSPS, are promulgated for emissions of particular air pollutants from specific sources, e.g., inorganic arsenic emissions from glass manufacturing plants. NESHAPs are not generally applicable to CERCLA remedial activities because CERCLA sites do not generally contain one of the specific source categories regulated. Moreover, NESHAPs as a whole are generally not relevant and appropriate because the standards of control are intended for the specific type of source regulated (and not all sources of that pollutant). A possible exception to this is the asbestos NESHAP, (see next section). However, part of a NESHAP may be relevant and appropriate to a CERCLA site. For example, the NESHAP for vinyl chloride (40 CFR § 61.64(b)) sets a vinyl chloride emissions level not to exceed 10 ppm (average for 3-hour period) for strippers. This standard may be relevant and appropriate for CERCLA air strippers with vinyl chloride emissions.

1.3.1 Asbestos NESHAP

The one circumstance in which a NESHAP may be relevant and appropriate involves the cleanup of certain kinds of asbestos waste. Emissions of asbestos fibers are controlled by the NESHAP described in Subpart M of 40 CFR Part 61, which includes requirements for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations (40 CFR 61.153), for active waste disposal sites (40 CFR 61.156), and for waste disposal for demolition and renovation operations (40 CFR 61.152), but no requirements for inactive waste disposal sites for demolition and renovation operations. Therefore, the NESHAP will not be applicable to cleanup of an inactive waste disposal site unless it was owned or operated by an asbestos mill, manufacturer, or fabricator, or contains waste from such sources. However, the NESHAP specified in 40 CFR 61 Subpart M is relevant and appropriate to the control of emissions and access

under CERCLA at an inactive waste disposal site for demolition and renovation operations because the situations are sufficiently similar (see also Chapter 5 below regarding worker requirements for asbestos removal).

1.4 RCRA REGULATIONS

EPA has initiated an effort to control air emissions from hazardous waste treatment, storage, and disposal facilities (TSDF) regulated under RCRA. The first in a series of such rules was proposed in the Federal Register on February 5, 1987 (52 FR 3748). The standards would limit emissions of volatile organics at TSDFs by a combination of performance, design, and operating standards. The proposed standards include requirements for installation, operation, and maintenance of control equipment, leak detection and repair, and recordkeeping and reporting. Again, if the pollutants emitted and the technology involved at a Superfund site are addressed by or sufficiently similar to the RCRA rules, when final, these requirements would be considered ARAR. Further standards will be proposed for lagoons, landfills, waste piles and land treatment facilities.

1.5 STATE AIR TOXIC PROGRAMS

A number of State pollution control agencies have adopted or are in the process of establishing programs to regulate what are generally referred to as "toxic air pollutants." Some States have delegated authority to local air agencies. These programs differ from State to State in the pollutants and sources regulated and the safe levels adopted.⁴ The following paragraphs highlight some of these variations. The RPM must coordinate with the appropriate State or local (if delegated authority by the State) agency to determine these requirements.

Many states control toxic air pollutants through imposition of BACT and then determine whether residual emissions exceed State standards. Other States control toxic air pollutants through acceptable ambient concentrations. In this process, the concentration of the toxic pollutant is estimated by modeling to a receptor, usually at the fence line of the source, and compared with the acceptable limit. What is an "acceptable limit" varies widely from State to State. Many States establish acceptable limits by applying a correction factor to occupational standards, e.g., threshold limit values (TLV). These correction factors vary from 1/10 to 1/420.

⁴ Except where NESHAPS have been adopted, there are no Federal or CAA-related requirements on the State control of toxic air pollutants. EPA's role is currently to provide information, e.g., through the National Air Toxics Information Clearinghouse (NATICH) and the Control Technology Center (the CTC Hotline number is (919) 541-0800).

Other States regulate carcinogens using risk assessment principles. For example, the risk to the most exposed individual in any population exposed to a carcinogen (for an assumed 70-year lifetime) cannot exceed 1×10^{-5} cancer deaths. A typical State air toxics program will require a source to do the following:

- o Identify pollutants of concern by comparing anticipated emissions with the State air toxics list;
- o Estimate emissions of toxic air pollutants, using procedures approved by the State;
- o Estimate offsite concentrations, normally by air quality modeling procedures approved by EPA or the State;
- o Compare off-site concentrations to permissible State levels;
- o If a new source is likely to exceed the State limits, require additional controls beyond what would otherwise be required.

Exhibit 2 is a chart summarizing the overall status of State air toxics programs.

1.6 Prevention of Significant Deterioration

Regions throughout the country are designated as attainment or non-attainment areas for each of the criteria pollutants. Part C of the CAA requires SIPs to contain "adequate provisions" for the prevention of significant deterioration (the PSD program) of air quality in an attainment area, i.e., a "clean" area whose air quality is better than that required by the NAAQS. PSD areas do not necessarily have the same boundaries as air quality control regions.

In general, the purpose of the PSD program is to ensure that air quality in attainment areas does not significantly deteriorate, while a margin for future industrial growth is maintained. Therefore, "major" new sources or "major" modifications to existing sources must obtain PSD permits before beginning construction. Pursuant to § 121(e), a CERCLA response action taking place entirely onsite is exempt from the requirement to obtain a permit but must comply with all substantive requirements of a PSD review. The PSD program is complicated. The following discussion only highlights the minimum Federal requirements. States may have more stringent requirements and thresholds.

1.6.1 PSD Classification

The PSD regulations (40 CFR Part 52) classify PSD areas as either Class I, Class II, or Class III.⁵ Each classification differs in the amount of growth it will permit before significant air quality deterioration would be deemed to occur. Significant deterioration is said to occur when the amount of new pollution would exceed the applicable maximum allowable increase ("increment"), the amount of which varies with the classification of the area. The reference point for determining air quality deterioration in an area is the baseline concentration, which is essentially the ambient concentration existing at the time of the first PSD permit application submittal affecting that area. To date, only PSD increments for sulfur dioxide and particulate matter have been established.⁶

PSD requirements are implemented through a pre-construction review process, conducted either by EPA, or by the State if EPA has approved the State's PSD plan or has been delegated EPA's authority. The review process requires that new major stationary sources and major modifications be carefully reviewed prior to construction to ensure compliance with the NAAQS and the applicable PSD air quality increments and application of the best available control technology (BACT) on the project's emissions of all regulated pollutants (i.e., pollutants regulated under NAAQS, NESHAPS and NSPS). Moreover, if application of a control system results directly in the release of pollutants that are not currently regulated under the CAA, the net environmental impact of such emissions must be considered in making the BACT determination for pollutants that are regulated.

1.6.2 Applicability of PSD Review

1.6.2.1 Stationary Source

A stationary source generally includes all pollutant-emitting activities which belong to the same industrial grouping, are located on contiguous or adjacent properties, and are under common control. Thus, all emissions points at a Superfund site would be considered one stationary source for purpose of determining applicability of PSD review. However, only major new sources or

⁵ Class I areas have the smallest increments and thus allow only a small degree of air quality deterioration. Certain wilderness areas and national parks are mandatory Class I areas (see 40 CFR § 51.166). Class II areas can accommodate normal well-managed growth. Class III designations have the largest increments and are appropriate for areas desiring a larger amount of development (currently, no areas have been designated Class III). In no case is the air quality of an area allowed to deteriorate beyond the NAAQS. With the exception of the mandatory Class I areas, all clean areas in the country were initially designated as Class II.

⁶ PSD increments for nitrogen oxides and particulate matter less than 10 microns in particle size (PM₁₀) are under development.

major modifications are subject to this review. Source size is defined in terms of "potential to emit," i.e. the capability at maximum design capacity to emit a pollutant after the application of all required air pollution control equipment and after taking into account all Federally enforceable requirements restricting the type or amount (e.g., prohibition on nighttime operation) of source operation.⁷

1.6.2.2 Major Source or Major Modification

A "major stationary source" is any new source type belonging to a list of 28 source categories, e.g., petroleum refineries or primary lead smelters, that emit or have the potential to emit 100 tons per year or more of any regulated pollutant. The source categories are identified at 40 CFR §52.21(b)(1)(i)(a). Any other source type (e.g., pollutant-emitting activities during a Superfund cleanup action) that emits (or has the potential to emit) 250 or more tons of any regulated pollutant per year is also considered a major source. If federally enforceable controls are imposed that limit emissions to less than 250 tons per year, PSD requirements will not apply.

A "major modification" is generally a physical or operational change in a major stationary source that would result in a "significant" "net emissions - increase" for any regulated pollutant. Specific numerical cutoffs that define "significant" increases are identified in 40 CFR §52.21(b)(23) (see Exhibit 3). A Superfund site would be considered a modification to an existing source (e.g., an ongoing industrial facility) only where the site is physically connected to or immediately adjacent to the existing source, a responsible party (RP) is conducting the cleanup, the RP is also the owner or operator of the existing source, and the waste at the CERCLA site is associated with the operations of the existing source. Cleanup actions conducted by other than the owner or operator of the adjacent facility would not be considered a modification to the existing source. This is consistent with the interpretation of modification under the CAA, i.e., only changes to a facility by the owner or operator may be considered modifications.

Fugitive emissions are not to be considered in determining whether a source would be a major source (i.e., the 100 or 250 ton/year threshold), except when such emissions come from source categories listed in 40 CFR §52.21(b)(1)(c)(iii). Fugitive emissions are those emissions that cannot reasonably be expected to pass through a stack, vent, or other functionally equivalent opening, such as a chimney, roof vent, or roof monitor. Fugitive emissions would not be counted in with CERCLA site emissions unless the site is considered a modification to one of the listed source categories.

⁷ "Federally enforceable" means that: (1) the restriction must be required by a Federal or State permit granted under the applicable SIP or embodied in the SIP itself, and (2) the source and/or the enforcement authority must be able to show compliance or noncompliance.

To determine whether a modification's "net emissions increase" would qualify as "significant," the potential to emit resulting from the physical or operational change must be determined. This amount is added to any other increases or decreases in actual emissions at that source (i.e., the source adjacent to the Superfund site) that are contemporaneous with the particular change (within the preceding 5 years, or in the case of an approved State program, such other period that may be specified therein) and are otherwise creditable.⁸ If the total exceeds zero, a net emissions increase is considered to result from the change. For example, if the net emissions increase (i.e., the net difference between the Superfund cleanup activity and increases/decreases at the adjacent facility) is larger than the numerical cut-offs for significant increases (see Exhibit 3), then the modification is a "major modification."

1.6.2.3 PSD Area

For a major source or modification, PSD review requirements apply only to the extent that the prospective or existing facility is located in a PSD area, i.e., the area is not formally designated by the State as "nonattainment" for the criteria pollutants in question. The pollutant which will be emitted in "major" quantities does not have to be the same pollutant for which the area is designated "attainment." The geographic applicability test does not take into account what new pollutant emissions caused the construction to be considered major. It looks simply at whether the source is major for any pollutant and, regarding a particular pollutant, will be located in a PSD area.

1.6.2.4 Pollutants for Which Area is PSD

Once a source has passed the size and location tests, it must then assess whether the pollutants it will emit are subject to PSD review. If a major source/modification emits pollutants for which the area is designated "nonattainment," then the source is subject to nonattainment (new source) review rather than from PSD review for those pollutants. If the major source/modification emits only pollutants for which the area of location is nonattainment, no PSD review is required. However, the source must meet the applicable nonattainment new source review requirements for each nonattainment pollutant emitted (see section below). Thus, it is often the case that a source is subject to PSD review for some pollutants and nonattainment new source review for others.

1.6.2.5 PSD Review Applies to Significant Emissions

⁸ A contemporaneous increase or decrease is creditable only if the relevant reviewing authority has not relied on it in issuing a PSD or other Clean Air Act permit for the source, and that permit is still in effect when the increase in actual emissions from the particular change occurs.

The PSD review applies to all significant emissions of regulated air pollutants at a major new source, and significant net increases at a major modification (see Exhibit 3).⁹ In addition, an emission is still considered "significant" if the major source is constructed within 10 kilometers of a Class I area and has an impact on such area equal to or greater than 1 milligram/cubic meter (24-hour average) for any regulated pollutant. See 40 CFR §52.21(b)(23)(iii).

The PSD regulations contain specific exceptions for some forms of construction. For example, PSD review requirements do not apply to a major source or modification that is a:

- o Nonprofit health or educational institution when such exemption is requested by the governor; or
- o Portable source which has already received a PSD permit and proposes relocation.¹⁰

1.6.3 Substantive Requirements of PSD Review

1.6.3.1 Best Available Control Technology

Any major source or modification subject to PSD review (a "PSD source") must ensure application of best available control technology (BACT). BACT requires the maximum degree of continuous emissions achievable reduction for each regulated pollutant. The analysis to determine what BACT means for a particular source must evaluate the energy, environmental, economic, and other costs associated with each alternative technology, and the benefit of reduced emissions that the technology would bring (some States consider the duration of emissions in this analysis.)

BACT is applied at each emissions point, and is required for each regulated pollutant being emitted by the source in significant amounts (see Exhibit 3). Moreover, the BACT analysis must also consider emissions of nonregulated toxic pollutants in determining BACT for a regulated pollutant. Thus, for example, if two alternative control devices would provide the same degree of reduction in

⁹ In determining whether the emissions of a particular pollutant are "significant," the net amount of emissions from all emissions points within a source is estimated.

¹⁰ Other conditions for obtaining a portable source exemptions are that: (1) emissions at the new location will not exceed previously allowed emission rates; (2) emissions at the new location are temporary; and (3) the source will not adversely affect a Class I area or contribute to either any known increment or violation of a NAAQS. The source must provide reasonable advance notice to the reviewing authority of the relocation.

emissions of the regulated pollutant, but one of them is more effective in controlling unregulated toxic emissions, that device would be more appropriate as BACT. In addition, if there is no economically reasonable or technologically feasible way to accurately measure the emissions, and hence to impose an enforceable emissions standard, the source may be required to use source design, alternative equipment, work practices, or operational standards to reduce emissions of the pollutant to the maximum extent.

1.6.3.2 Ambient Air Quality Analysis

Each source or modification undergoing PSD review must perform an air quality analysis to demonstrate that its new pollutant emissions will not cause or contribute to air pollution in violation of either the applicable NAAQS or PSD increment.¹¹ This analysis must be based on the applicable Air Quality Models (EPA-450/2-78-027R) or an approved substitute. The six basic steps in an air quality analysis are as follows:

- o Define the impact area of the proposed major source or major modification for each applicable pollutant. To properly establish the impact area (i.e., where the applicable emissions will have a significant impact on ambient concentrations) in order to determine compliance with applicable NAAQS and increments, the PSD source should consult the review agency dispersion modeling contact to receive concurrence on:
 - Selection of an appropriate dispersion model;
 - Use of adequate and representative meteorological data; and
 - Techniques and assumptions to be used in the analysis.¹²
- Determination of the impact area of the proposed source

¹¹ Some States may exempt a temporary source (e.g., fugitive dust from construction operations) from the increment analysis for particulate matter (see below).

¹² The latest revisions of the EPA documents Guideline on Air Quality Models (revised, July 1986) and the Guidelines for Air Quality Maintenance Planning and Analysis, Volume 10 (October 1977) serve as helpful guidelines for acceptable dispersion modeling. However, since no two scenarios are identical, it is the PSD source's responsibility to consult with the review agency to ensure that the methods and procedures to be used in performing the dispersion modeling are appropriate.

must include all direct emissions, including both stack and quantifiable fugitive emissions of applicable pollutants, and "secondary emissions". Secondary emissions are those that would occur as a result of the construction or operation of the proposed source, but do not come from the source itself (e.g., off-site support facilities). However, temporary emissions, such as those related to construction, need not be considered.

- o Establish appropriate inventories. The PSD source is required to compile an emissions inventory of applicable criteria pollutants that have been demonstrated to result in significant impacts. In addition, an inventory of applicable noncriteria pollutants may be required to determine if these pollutants exist or will exist in high concentrations that may pose a threat to health or welfare. Actual emissions should be used to reflect the impact that would be detected by ambient air monitors.
- o Determine existing ambient air concentrations for these pollutants. The air quality analysis for criteria pollutants consists of ambient monitoring data that represents air quality levels in the last year's period preceding the PSD application. EPA has published specific guidelines for a PSD source in Ambient Monitoring Guidelines for Prevention of Significant Deterioration. The use of existing representative air quality data will be permitted in lieu of site-specific monitoring where the data are determined representative and adequate. For pollutants for which NAAQS do not exist, the required analysis will normally be based on dispersion modeling alone. Further, de minimis increases of pollutants are exempt from monitoring requirements (see Exhibit 4).
- o Determine how much of the increment is available. Sources which propose to emit sulfur dioxide or particulate matter must also perform an analysis to compute how much of the PSD increment in that area remains available to them (see Exhibit 5). Increment concentration is, in general, that portion of ambient air concentration in an area which results from:
 - Actual emissions from any major stationary sources on which construction commenced January 6, 1975; and
 - Actual emission increases and decreases at all stationary sources occurring after the baseline date.

The baseline date is the date after August 7, 1977 when

the first complete PSD application is submitted by a proposed major source or major modification. The area in which the baseline date is triggered by a PSD permit application is known as the baseline area. In general, increment consumption and expansion are based on actual emissions. However, if little or no operating data are available, as in the case of permitted emissions units not yet in operation at the time of the increment analysis, the allowable emission rate must be used.¹³

- o Perform a screening analysis for each applicable pollutant. This interim, worst-case scenario analysis will primarily provide the PSD applicant with some essential data:
 - An approximation of the maximum downwind impacts;
 - A general idea of the location of the maximum impacts; and
 - Quick preliminary results.

Both quantifiable fugitive emissions and stack emissions should be included in the screening analysis. In addition, if secondary emissions are quantifiable and are expected to affect the air quality in the impact area, they should also be included in the screening analysis. If the screening analysis shows that the source will not cause or contribute to a violation of a NAAQS or PSD increment, no refined analysis is required.

- o Perform a refined analysis to determine projected air quality resulting from emissions of applicable pollutants. The objective is to determine with greater certainty whether the PSD source will in fact cause or contribute to air pollution which results in violation of either a NAAQS or a PSD increment. The refined dispersion modeling analysis will use the emissions inventory and all other data gathered up through the screening analysis. Concurrence from the reviewing agency is recommended before starting the analysis to confirm that the techniques used are considered valid.

¹³ "Allowable emissions" is defined at 40 CFR § 52.21(b)(16) as the emissions rate using the maximum rated capacity of the source and the most stringent of either NSPS/NESHAPS, SIP limitation, or the emissions rate in a Federally enforceable permit.

1.6.3.3 Other Impacts Analysis

A source is required to analyze whether its proposed emissions increases will impair visibility or impact soils or vegetation.

1.6.3.4 No Adverse Impact on a Class I Area

If emissions from a source could impact a Class I area, the regulations require notification to the Federal Land Manager and the Federal official charged with direct responsibility for managing these lands. If the Federal Land Manager demonstrates that emissions from a proposed source would impair air quality-related values, even though the emissions levels would not cause a violation of a NAAQS or the allowable air quality increment, the Federal Land Manager may recommend that the emission not be allowed.

1.6.3.5 Other Requirements

The regulations solicit and encourage public participation in the PSD review process. Also, post-construction monitoring is sometimes required of the PSD source. However, de minimis amounts under 40 CFR §52.21(i)(8) (see Exhibit 4) may be exempt from this requirement. This requirement may also be satisfied by existing monitors.

1.7 Nonattainment

Any major source or major modification (same definition as under PSD, except that 100 tons per year is the "major" size threshold for all source categories) that will emit NAAQS pollutants for which an area has been designated nonattainment must comply with the requirements of Part D of the CAA with respect to those pollutants. Many air quality regions are currently nonattainment for ozone. The Part D requirements are as follows:

- o Offsets. At the time the proposed new source is to begin operating, total allowable emissions from all existing sources in the area, including the proposed source, must be "sufficiently less" than total emissions from existing sources allowed under the applicable SIP prior to the permit application. The term "sufficiently less" means emissions reductions that, when considered together with other SIP provisions, would constitute "reasonable further progress" toward attaining the NAAQS. This condition generally requires that the proposed source obtain an offset, i.e., secure an emissions reduction elsewhere in the impact area of emissions of the pollutant(s) that it proposes to emit. The offset must be better than one to one, i.e., the reduction must be greater than the proposed emission. In addition, the reduction must be federally

enforceable. Some states may exempt temporary sources from this requirement.

- o Construction moratorium. CAA § 110(a)(2)(I) provides that no major stationary source shall be constructed or modified in a nonattainment area if the emissions from the source will cause or contribute to concentrations of any pollutant for which the area is nonattainment unless the nonattainment plan meets the requirements of Part D. Major sources/modifications are subject to offset requirements and the construction moratorium only if they emit in major amounts the pollutant for which the area is designated nonattainment.
 - o Allowable concentrations. Emissions from the proposed source will not cause or contribute to concentrations in excess of the allowable concentration of the pollutant permitted of new and modified sources under the applicable nonattainment plan.
 - o Lowest achievable emissions rate. The proposed source must apply the lowest achievable emission rate (LAER) control technology. LAER means for any source the more stringent rate of emissions based on either of the following (40 CFR § 51.165(a)(1)(xiii):
 - The most stringent emissions limitation which is contained in the SIP of any state for such class or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or
 - The most stringent emissions limitation which is achieved in practice by such class or category or stationary source.
- LAER must be at least as stringent as an applicable NSPS. The LAER requirement (and other substantive nonattainment new source review provisions) applies to each regulated pollutant emitted by a major new source in a "major" amount -- (i.e., in excess of 100 tons per year) -- and by a major modification in a "significant" amount (see Exhibit 3) for which the area is nonattainment.
- o Statewide compliance by the owner/operator. The owner or operator of the proposed source demonstrates that all major sources that it owns or operates elsewhere in the

State are in compliance with all applicable emission limitations and standards, or are on a compliance schedule to do so.

- o Nonattainment plan. The attainment plan is being implemented.

If the proposed source or modification cannot meet all of these conditions, it will not be allowed to be constructed.

EXHIBIT 1
CRITERIA AIR POLLUTANT STANDARDS

Pollutant (hours)	NAAQS			Significant Harm	
	Primary Standard (mg/m) ³	Averaging Time	Secondary Standard (mg/m) ³	Level	Averaging Time Averaging Time(mg/m) ³
Sulfur oxides	80 365	Annual arithmetic mean Maximum 24-hour concentration, not to be exceeded more than once/year	1,300	Maximum 3-hour concentration, not to be exceeded more than once/year	2,620 24
Particulate matter* less than 10 microns in particle size*	50 ug/m ³ 150 ug/m ³	Annual geometric mean Maximum 24-hour concentration, not to be exceeded more than once/year	50 ug/m ³ 150 ug/m ³	Annual geometric mean Maximum 24-hour concentration, not to be exceeded more than once/year	1,000 24
Carbon monoxide	^a 9	8-hour average, not to be exceeded more than once/year	NA	--	^b 57.5 ^b 86.3 8 4
	^a 35	1-hour average, not to be exceeded more than once/year			^b 144 1
Ozone	^a 0.12	Expected number of days per calendar year with maximum concentration above 0.12 ppm greater than or = 1.	^a 0.12	--	1,200 2
Nitrogen dioxide	^a 0.053	Annual arithmetic mean			
^a 0.053	--		3,750	1	
Lead	1.5	Average over calendar quarter	1.5	--	938 NA 24 --

^a ppm.
^b mg/m³

*Some State and local agencies may retain the previous primary and secondary standards for total suspended particulates (TSP).

NOTE: Sampling and analytical procedures for the criteria pollutants are specified in Appendix A to 40 CFR § 50.

0121012

EXHIBIT 2

SUMMARY STATE AIR TOXICS REGULATORY PROGRAM INFORMATION

1. Number of agencies with air toxics programs (independent of NESHAPS) in place	27 States 18 locals
2. Number of agencies which have or one developing air toxic programs	23 States (some overlap with Question 1) 25 locals (some overlap with Question 1)
3. Number of agencies where program is or will be based on promulgated regulations	27 States 27 locals
4. Number of agencies where program is based on guidelines	27 States (some over-lap with Question 3) 18 locals
5. Number of agencies using specified list of pollutants	16 States 27 locals
6. Number of agencies using specified list of sources	3 States 13 locals
7. Number of agencies using BACT/technology-based limits	32 States 29 locals
8. Number of agencies using acceptable ambient limits	38 States 25 locals
9. Number of agencies using risk assessment	28 States 28 locals

EXHIBIT 3
SIGNIFICANT EMISSION RATES
FOR DETERMINING PSD APPLICABILITY a/

Pollutant	Emissions Rate (tons/yr)
Carbon monoxide	100
Nitrogen oxides	40
Sulfur dioxide	40
Particulate matter	25
Ozone (VOC)	40 (of VOCs)
Lead	0.6
Asbestos	0.007
Beryllium	0.0004
Mercury	0.1
Vinyl chloride	1
Fluorides	3
Sulfuric acid mist	7
Hydrogen sulfide (H ₂ S)	10
Total reduced sulfur (including H ₂ S)	10
Reduced sulfur compounds (including H ₂ S)	10
Any other pollutant regulated under the Clean Air Act	Any emission rate
Each regulated pollutant	Emission rate that causes an air quality impact of 1 ug/m ³ or greater (24-hour basis) in any Class I area located within 10 km of the source

a/ Extracted from 40 CFR 52.21(b)(23).

EXHIBIT 4

DE MINIMIS AIR QUALITY IMPACTS
(PSD APPLICABILITY)

Carbon monoxide -- 575 ug/m³, 8-hour average;
Nitrogen dioxide -- 14 ug/m³, annual average;
Total suspended particulate -- 10 ug/m³, 24-hour average;
Sulfur dioxide -- 13 ug/m³, 24-hour average;
Ozone;¹
Lead -- 0.1 ug/m³, 24-hour average;
Mercury -- 0.25 ug/m³, 24-hour average;
Beryllium -- 0.0005 ug/m³, 24-hour average;
Fluorides -- 0.25 ug/m³, 24-hour average;
Vinyl chloride -- 15 ug/m³, 24-hour average;
Total reduced sulfur -- 10 ug/m³, 1-hour average;
Hydrogen sulfide -- 0.04 ug/m³, 1-hour average;
Reduced sulfur compounds -- 10 ug/m³, 1-hour average.

¹ No de minimis air quality level is provided for ozone. However, any net increase of 100 tons per year or more of volatile organic compounds subject to PSD would be required to perform an ambient impact analysis including the gathering of ambient air quality data.

EXHIBIT 5
ALLOWABLE PSD INCREMENTS
(ug/m³)

	Class I	Class II	Class III
<u>Sulfur Dioxide</u>			
o annual	2	20	40
o 24-hour	^a 5	^a 91	^a 182
o 3-hour	^a 25	^a 512	^a 700
<u>Total Suspended Particulate Matter</u>			
o annual	5	19	37
o 24-hour	^a 10	^a 37	^a 75

^a
Not to be exceeded more than once a year.

EXHIBIT 6

HAZARDOUS AIR POLLUTANTS,
SOURCES AND STANDARDS

Hazardous Pollutants	Sources	Standards
Arsenic	Glass manufacturing	Existing: 2.5 Mg/year or 85% control New: 0.4 Mg/year or 85% control
	Primary copper	11.6 mg/m ³ particulate matter
	Arsenic trioxide and metallic arsenic production	Inspection, maintenance, and housekeeping
Radionuclides	DOE facilities	25 mrem/year (whole body) <u>a/</u> 75 mrem/year (any organ)
	NRC facilities	25 mrem/year (whole body) 75 mrem/year (any organ)
	Elemental phosphorus	21 Ci/year <u>b/</u>
Radon 222	Uranium mines	Design and operation
	Uranium mill tailings	Design and operation
Coke oven emissions	Coke ovens (proposed 4/23/87)	Visible emissions and operating and maintenance requirements

a/ mrem - milliremb/ Ci - curie

CHAPTER 2

STANDARDS FOR TOXICS, PESTICIDES, AND LOW-LEVEL
RADIOACTIVE WASTES2.1 GUIDANCE FOR COMPLIANCE WITH TOXIC SUBSTANCES CONTROL ACT

This Section addresses CERCLA compliance with requirements under the Toxic Substances Control Act (TSCA). TSCA authorizes EPA to establish regulations for the testing of chemical substances and mixtures, premanufacture notification for new chemical substances or significant new uses of existing substances, chemical substances or mixtures that pose an imminent hazard, and recordkeeping and reporting requirements. Of these, the regulations controlling hazardous chemicals are most germane to CERCLA actions.

Section 6 of TSCA requires EPA to promulgate regulations when there is a reasonable basis to conclude that a chemical substance (or mixture) presents or will present an unreasonable risk of injury to human health or the environment. A demonstration that a chemical will present an unreasonable risk is made on the basis of a qualitative or quantitative risk assessment i.e., an evaluation of the likelihood that the chemical will cause adverse effects either to human health or the environment.

Chemicals reviewed under TSCA § 6 include chemicals that are on the TSCA inventory and have been referred to EPA under TSCA § 8(e), a mandatory reporting rule, or from the National Toxicology Program, the TSCA § 5 New Chemicals Program, the TSCA § 4 Test Rules Program or other sources. From the thousands of chemicals reviewed each year, candidates are selected for further review based on their potential to cause serious, long-lasting or irreversible harm to human health or the environment, e.g., carcinogenesis, mutagenesis, teratogenesis, chronic toxicity, behavioral disorders, cumulative or synergistic effects or environmental toxicity.

The risk assessment developed for a chemical that undergoes detailed review is used to determine whether EPA should regulate activities involving the chemical or whether the chemical should be referred to another agency (e.g., OSHA, CPSC) for regulation. With respect to Superfund cleanup actions, the risk numbers generated under TSCA may be included within the "to be considered" category when an ARAR for that substance is not available (see Volume 1, Section 1.4). The Office of Toxic Substances periodically updates the list of risk assessments.

Pursuant to TSCA § 6, EPA has published regulations on polychlorinated biphenyls (PCBs), fully halogenated chlorofluoroalkanes (prohibited for aerosol propellant uses subject to TSCA), and asbestos, (40 CFR Parts 761, 762 and 763, respectively). Requirements regarding PCBs will be discussed in this Section. Asbestos removal requirements are referenced in Chapter 1, Section 1.3.1 (asbestos NESHAP) and in Chapter 5, standards related to the cleanup action.

2.1.1 Guidance for Compliance with PCB requirements

2.1.1.1 Disposal

Disposal requirements for PCB-contaminated wastes vary according to the physical state and concentration of PCBs (40 CFR §761.60). PCBs at concentrations of 50 ppm or greater must be disposed of in an incinerator except as otherwise provided:¹

- o Any PCB dielectric fluid, regardless of its concentration, mixed with any PCB fluid containing more than 500 parts per million (ppm) must be disposed of in an approved incinerator (40 CFR § 761.30(a)(2)(iv));
- o Mineral oil dielectric fluid from PCB-contaminated electrical equipment containing a PCB concentration of 50 ppm or greater, but less than 500 ppm must be disposed of in either an approved incinerator, chemical waste landfill, or a high efficiency boiler (40 CFR § 761.60(a)(2));
- o Liquids, other than mineral oil dielectric fluid, containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, shall be disposed of in an incinerator, a chemical waste landfill, or a high efficiency boiler (40 CFR § 761.60(a)(3));
- o Any non-liquid PCBs at concentrations of 50 ppm or greater in the form of contaminated soil, rags, or other debris shall be disposed of in an incinerator or a chemical waste landfill (40 CFR § 761.60(a)(4));
- o All dredged materials and municipal sewage treatment sludges that contain PCBs at concentrations of 50 ppm or greater shall be disposed of in an incinerator or chemical waste landfill, or by a method approved by the appropriate Regional Administrator (40 CFR § 761.60(a)(5));
- o PCB Transformers (500 ppm PCBs or greater) may be disposed of in an approved incinerator or drained, flushed with a solvent, drained again and placed in an approved chemical waste landfill (40 CFR § 761.60(b)(1)(i))

¹ Dilution of PCBs is not acceptable. Any PCB-contaminated item that is less than 50 ppm as a result of dilution must be disposed of in accordance with requirements for the original PCB concentration.

- o Other PCB articles (500 ppm PCBs or greater) including electric motors, pumps, and pipes, may be disposed of in an approved incinerator or drained and placed in an approved chemical waste landfill (40 CFR § 761.60(b)(5));
- o PCB-contaminated transformers, circuit breakers, reclosers, voltage regulators, switches, electromagnets, and cable (50-499 ppm PCBs) must be drained; their disposal is not regulated (40 CFR § 761.60(b)(4));
- o PCB Small Capacitors (fluorescent light ballasts) may be disposed of as municipal solid waste (40 CFR § 761.60(b)(2)(ii)), except that those owned by a manufacturer must be sent either to an approved incinerator or an approved chemical waste landfill (40 CFR § 761.60(b)(2)(iv) and (v));
- o Large High or Low Voltage Capacitors (500 ppm PCBs or greater) must be disposed of in an approved incinerator (40 CFR § 761.60(b)(2)(iii)(B) and (v));
- o PCB Hydraulic machines, such as hydraulic die casting machines (50-999 ppm PCBs) may be disposed of as municipal solid waste after they are drained. If the PCB liquid contains 1000 ppm PCBs or greater, the hydraulic machine must be flushed with a solvent containing less than 50 ppm PCBs (40 CFR § 761.60(b)(3));
- o PCB containers with concentrations of 500 ppm PCBs or greater, unless decontaminated by flushing with a solvent of less than 50 ppm PCBs, must be disposed of in an approved incinerator or in an approved chemical waste landfill (40 CFR § 761.60(c)).

The regulations further specify requirements that the incinerator (40 CFR § 761.70), chemical waste landfill (40 CFR § 761.75), or other disposal method (40 CFR § 761.60(a)(5)(iii)) must achieve for each of the PCB-types described above. Also, the regulation states that machinery that comes in direct contact with PCBs is considered contaminated and must be disposed of by an approved method (40 CFR § 761.60(b)).

2.1.1.2 Storage for Disposal

The regulations (40 CFR § 761.65) specify requirements applying to the storage for disposal of PCBs and PCB Items (e.g., equipment) at concentrations of 50 ppm or greater. PCBs must be disposed of within one year after being placed in storage. Further, the regulations include structural requirements for facilities used for the storage of PCBs and PCB Items, requirements for the

containers used to store PCBs, the requirement to prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan, and the requirement to check all PCB articles and containers for leaks at least once every 30 days.

2.1.1.3 PCB Spill Cleanup Policy

Under 40 CFR § 761.60(d), EPA defines improper disposal of PCBs to be intentional (as well as unintentional) spills, leaks, and other uncontrolled discharges of PCB at concentrations of 50 ppm or greater. Spills include spills, leaks, or other uncontrolled discharges where the release results in any quantity of PCBs running off or about to run off the surface of the equipment or other PCB source, as well as the contamination resulting from these releases. With the exception of requirements for timely cleanup, regulatory requirements for the cleanup of PCB spills have never been established. Policies for the cleanup of PCB spills had been established by each EPA regional office. These standards were in the form of general guidelines to be applied on a case-by-case basis for specific spill situations.

However, EPA recently published a nonregulatory nationwide TSCA PCB spill cleanup policy (52 FR 10688, April 2, 1987). The policy establishes requirements for the cleanup of spills occurring after May 4, 1987 (the effective date of the policy) resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater. The policy states that spills which occurred before May 4, 1987, are to be decontaminated in accordance with the existing regional standards. The policy is based on EPA's evaluation of the potential routes of exposure and potential risks associated with common PCB spills. Insofar as this is a nonregulatory policy, it does not involve potential ARARs for Superfund cleanup actions. However, it does provide guidance on what should be considered when developing a protective remedy, particularly with respect to cleanup of soils contaminated with PCBs. The policy will eventually be codified in 40 CFR Part 761, Subpart G.

The policy requires the party responsible for the spill to clean up PCBs to different levels depending upon spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of PCBs initially spilled, and the nature and size of the population potentially at risk of exposure. Thus, the policy applies the most stringent requirements for PCB spill cleanup to areas where there is the greater potential for human exposure to spilled PCBs.

The cleanup standards described in the policy are intended to cover the following spill situations:

- o Cleanup of low-concentration spills which involve less than 1 pound PCBs by weight (40 CFR § 761.125(b)).
"Low-concentration" means PCBs that are tested and found to contain less than 500 ppm PCBs, or those PCB-containing materials which EPA assumes to be at concentrations below 500 ppm. The policy states that:

* * * November 1, 1987 * * *

- Solid surfaces should be double washed/rinsed; and
- All soil within the spill area, plus a 1-foot buffer, should be excavated, and the ground restored to its original configuration by backfilling with clean soil (i.e., soil containing less than 1 ppm PCBs).
- o Cleanup of high-concentration spills and low-concentration spills involving 1 pound or more PCBs by weight.

"High-concentration" means PCBs that contain 500 ppm or greater PCBs, or those materials which EPA assumes contain 500 ppm or greater PCBs in the absence of testing. The policy describes actions that should be taken immediately (within no more than 24 hours) including restricting the area, recording and documenting the area of visible contamination, and initiating cleanup and removal of all visible traces of contamination. The policy then describes cleanup standards depending upon the location of the spill:

 - Outdoor electrical substations. Contaminated solid surfaces will be cleaned to a PCB concentration of 100 micrograms/100 square centimeters. Soil contaminated by the spill will be cleaned either to 25 or 50 ppm PCBs by weight provided that a label or notice is visibly placed in the area.
 - Other restricted access areas. These are areas other than electrical substations that are least 0.1 kilometer away from residential/commercial areas, and are limited by man-made barriers (e.g., fences and walls) or substantially limited by naturally occurring barriers such as mountains, cliffs or rough terrain. The policy describes cleanup standards for surfaces contaminated with PCBs and further states that soil contaminated by the spill will be cleaned to 25 ppm PCBs by weight.
 - Nonrestricted access areas. These are areas other than outdoor electrical substations and other restricted access locations, i.e., residential/commercial areas and unrestricted access rural areas. The policy sets forth standards for cleanup of surfaces and vault areas. Also, the policy states that soil contaminated by the spill will be decontaminated to 10 ppm PCBs by weight provided that the soil is excavated to a minimum depth of 10 inches,

a 10-inch cap of clean (less than 1 ppm PCBs) is put on, and the site is restored.

- o Additional cleanup. The policy states that in exceptional spill situations, site-specific risk factors may warrant additional cleanup to more stringent numerical decontamination levels. For example, even after cleanup to the standards specified in the policy, site-specific characteristics such as short depth to ground water, type of soil, or the presence of a shallow well may pose exceptionally high potential for ground-water contamination by PCBs. Therefore, the policy provides that the Regional Administrator may require additional cleanup to prevent unreasonable risk. The RPM should similarly consider whether additional cleanup (beyond the policy's numerical standards) is necessary in order to be protective under a Superfund cleanup action.
- o Spill situations excluded under the policy. The policy is intended to cover the typical PCB spill situations involving the limited release of PCBs during the course of EPA-authorized activities such as the use of electrical equipment, the servicing of electrical equipment, and the storage for disposal of PCBs. Other spill situations are not considered "typical." Therefore, the policy provides that the numerical cleanup standards described above are not to be applied to spills directly into:
 - Surface water;
 - Drinking water;
 - Sewers;
 - Grazing lands; and
 - Vegetable gardens.

2.1.1.4 RCRA Land Disposal Restrictions

Liquid hazardous wastes containing PCBs at concentrations greater than or equal to 50 ppm are addressed by RCRA under the California List Wastes land disposal restrictions.

40 CFR § 268.42(a) specifies that liquid hazardous wastes containing PCBs at concentrations greater than or equal to 50 ppm but less than 500 ppm must be incinerated in a facility meeting the requirements of 40 CFR § 761.70 or burned in a high efficiency boiler meeting the requirements of 40 CFR § 761.60.

Alternative treatment methods (40 CFR § 268.42(b)) may be used if the treatment method can be shown to achieve a measure of performance equivalent to methods specified in paragraph (a).

This rule specifies stricter standards for a subset of the PCB wastes covered by TSCA -- liquid wastes containing PCBs at concentrations between 50 and 500 ppm that also contain RCRA listed or characteristic wastes. Where TSCA would allow disposal of these wastes in a landfill meeting specifications of 40 CFR Section 761.75, RCRA requires thermal treatment in an incinerator or high efficiency boiler or an equivalent alternate treatment.

2.2 GUIDANCE FOR COMPLIANCE WITH THE FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) authorizes EPA to regulate the marketing and use of all pesticide products in the United States. EPA accomplishes this through a product licensing or registration process, accompanied by reregistration of products initially registered before 1977, and Special Review of pesticides posing health or safety concerns. A vital part of the pesticide registration process is EPA approval of product labeling. Under FIFRA, the label is the law -- use of a registered pesticide product in a manner inconsistent with its labeling is a violation of the Act.

To ensure proper use of pesticides that are especially toxic or pose particular health or environmental hazards, EPA restricts the use of such products to trained, certified pesticide applicators. Products found to pose risks that outweigh their benefits may be suspended or cancelled by EPA. All FIFRA provisions are enforced by a compliance monitoring program that is carried out by States under cooperative agreements with EPA.

Under Section 19 of FIFRA, EPA has the authority to issue procedures and regulations for the disposal and storage of excess pesticides, pesticide containers, and pesticide-related wastes. EPA has published recommended and not recommended procedures in 40 CFR Part 165, Subpart C.² These procedures are not potential ARARs for Superfund cleanup actions but can be considered when developing a protective remedy.

Storage and disposal statements appear on the labeling of all registered pesticide products. These statements are tailored to reflect the toxicity of the product and type of use pattern and user involved (for example, the household user as opposed to the commercial or industrial user). It is unlawful for the user to dispose of a pesticide product in a manner inconsistent with its label instructions. At a Superfund site, however, the disposal labeling on a pesticide may provide useful information but would not be an applicable

² Revised regulations for the disposal of specific pesticide products, e.g., household, agricultural, and chemical wastes, are currently under development.

requirement since at that point in time the pesticide would be considered a RCRA waste rather than a pesticide product.

2.2.1 Guidance for Compliance with FIFRA Requirements

2.2.1.1 Procedures Not Recommended for Disposal (40 CFR § 165.7)

Pesticides, pesticide containers or pesticide container residue should not be stored or disposed of:

- o In a manner inconsistent with its label or labeling;
- o So as to cause or allow open dumping of pesticides or pesticide containers;
- o So as to cause or allow open burning of pesticides or pesticide containers, except in certain areas where allowed by State and local regulations; and
- o So as to cause or allow water dumping or ocean dumping of pesticides or pesticide containers except in conformance with regulations developed under the National Marine Protection, Research and Sanctuaries Act and the Clean Water Act (see Volume II, Chapter 2).

2.2.1.2 Procedures Recommended for the Disposal of Pesticides (40 CFR § 165.8)

EPA recommends the following procedures for the disposal of certain groups of pesticides:

- o Organic pesticides (except organic mercury, lead, cadmium, and arsenic). The preferred method of disposal is incineration in a pesticide incinerator at the specified temperature/dwell time combination that will cause complete destruction of the pesticide. If appropriate incineration facilities are not available, other methods to be considered include burial in a specially designated landfill, soil injection, chemical methods, or well injection. The regulations caution that the impact of these alternatives is not well known in all cases and that they should be used only with specific guidance. If adequate procedures are not available, temporary storage of pesticides for disposal should be undertaken.
- o Metallo-organic pesticides (except organic mercury, lead, cadmium, or arsenic compounds). The regulations recommend subjecting these compounds to an appropriate chemical or

physical treatment to recover the heavy metals before incineration. Other disposal alternatives if treatment and incineration are not available are burial in a landfill, soil injection, chemical degradation, or well injection. These alternatives are subject to the same cautions described above for the disposal alternatives for organic pesticides.

- o Organic mercury, lead, cadmium, arsenic and all inorganic pesticides. The regulations recommend that chemical deactivation be used to convert these pesticides to non-hazardous compounds and to recover the heavy metal resources. Chemical deactivation is not currently available for all pesticides. If chemical deactivation is not available, these pesticides should be encapsulated and buried in a specifically designated landfill. If neither option is available, the pesticides should be placed in suitable containers and temporarily stored until adequate disposal facilities or procedures are available.

40 CFR Part 165, Subpart G also provides recommended procedures for the disposal of pesticide containers and residues (40 CFR § 165.9) and the storage of pesticides and pesticide containers (40 CFR § 165.10).

2.2.1.3 Pesticide Control Under Other Statutes

Requirements under the Clean Water Act (CWA) and RCRA are potential ARARs for the disposal of pesticides. Because some pesticides are regulated as toxic pollutants under the CWA, effluent limitations or prohibitions regarding the discharge of pesticides to surface waters are potential ARARs (see Volume 2, Chapter 2). Further, some pesticides are listed as a hazardous waste or constituent subject to regulation under Subtitle C of RCRA, 40 CFR § 261.33(e) and (f) (see Volume I, Chapter 2).

2.2.1.4 Other Manuals

Technical manuals that may provide useful information regarding pesticides, e.g., toxicity, solubility, include the following:

- o The Degradation of Selected Pesticides in Soil: A Review of the Published Literature, Municipal Environmental Research Laboratory (August 1977), EPA-600/9-77-022.
- o Farm Chemicals Handbook (updated yearly).
- o Crop Protection Chemicals Reference.

2.3 GUIDANCE FOR COMPLIANCE WITH LOW-LEVEL RADIOACTIVE WASTE STANDARDS PROGRAM

2.3.1 Overview of the Low-Level Radioactive Waste Standards Program

EPA is developing environmental standards for land disposal of low-level radioactive waste (LLW). These standards will regulate facilities that dispose of LLW, whether the facilities are licensed and regulated by the Nuclear Regulatory Commission or their Agreement States, or are owned and operated by the Department of Energy. The proposed standards, expected out in late 1987, are expected to consist of four components:

- o Exposure limits for pre-disposal operations;
- o Criteria for wastes that are Below Regulatory Concern (BRC);
- o Post-disposal exposure limits; and
- o Ground-water contamination limits.

In addition to covering those radioactive wastes as defined by the Atomic Energy Act, EPA will include high-concentration, relatively low-volume Natural and Accelerator-produced Radioactive Material (NARM) wastes, in the same standards' promulgation).

These standards, when finalized, would be potential ARARs for CERCLA sites containing low-level radioactive waste, e.g., certain kinds of radium and thorium.

CHAPTER 3

OTHER RESOURCE PROTECTION STATUTES

3.0 OVERVIEW

The laws addressed in the following sections contain consultation, documentation, and reporting requirements that must be carried out for off-site remedial actions. While EPA interprets CERCLA § 121(e) to exempt lead agencies from obtaining Federal, State or local permits (or documents similar to permits) or from complying with the procedural/administrative requirements associated with permitting-type processes for on-site remedial activities, it is recommended that lead agencies, nevertheless, consult as specified with administering agencies for on-site actions. The administering agencies have the expertise to determine the impacts of a remedial action on particular aspects of the environment and what steps should be taken to avoid and mitigate adverse impacts.

The NEPA Compliance staffs at Headquarters and in the Regions can assist project officers in meeting the substantive requirements of these laws and carrying out consultation through contacts in other agencies. RPMs are advised to contact the NEPA Compliance staff early in the planning process of a remedial action for assistance.

The laws described in this section apply to activities conducted by Federal agencies or with Federal assistance. EPA interprets CERCLA § 121's requirement to meet ARARs as applicable to all remedial activities undertaken pursuant to CERCLA §§ 104, 106, 120 and 122. Therefore, the ARARs described in this chapter must be complied with by the lead agency (EPA, State, or other Federal agency) or a responsible party conducting a remedial action under CERCLA.

3.1 GUIDANCE FOR COMPLIANCE WITH THE REQUIREMENTS OF THE NATIONAL HISTORIC PRESERVATION ACT

Pursuant to § 106 of the National Historic Preservation Act (NHPA) of 1966, 16 USC §§ 470 *et. seq.*, and its implementing regulation (36 CFR § 800), CERCLA remedial actions are required to take into account the possible effect of remedial activities on any historic properties included in (or eligible or potentially eligible for inclusion in) the National Register of Historic Places (NRHP).¹ For purposes of this section, historic properties are referred to as cultural resources. The NRHP is a listing of buildings, archaeological sites, districts, and objects of national, State, and local significance.

¹ Other statutes contain requirements regarding archeological resources, e.g., the Archaeological and Historic Preservation Act of 1974 and the Archaeological Resources Protection Act of 1979. The State Historic Preservation Officer (see footnote 2) should be consulted to determine whether these requirements apply.

Substantive compliance with the NHPA means that cultural resources included on (or eligible for inclusion on) the National Register that are located on or in near proximity to the site are identified. Cultural resource surveys are usually carried out to help in the identification of previously undocumented resources. Also identified are the possible impact of proposed remedial activities on such resources. The feasible alternatives to avoid such effects should be examined. If the activity is likely to have an effect on such resources, the lead agency shall examine whether feasible alternatives exist that would avoid such effects. If an effect cannot reasonably be avoided, measures shall be taken to minimize or mitigate the potential effects.

The regulations implementing NHPA § 106 describe the procedural requirements to be followed by Federal agencies. These procedural requirements involve consultation between the Federal agency, a party undertaking a Federally-assisted cleanup, the Advisory Counsel on Historic Preservation (ACHP), and the State Historic Preservation Officer (SHPO), and other interested parties.² For CERCLA actions, these requirements must be complied with for any part of the cleanup action that takes place off-site. Adherence to these administrative/procedural steps is strongly encouraged for cleanup actions that take place entirely on-site because of the expertise of the SHPO and the ACHP in these matters.

States often act as the lead agency for CERCLA remedial actions. In such event, the responsibilities described in this section would be undertaken by the State. However, NHPA regulations require that Federal agencies retain the responsibility for final decisions regarding the impacts of remedial activities on cultural resources. Therefore, in this section, lead agency is used whenever EPA or a State agency may act on cultural resource identifications or "no effect" determinations. Determinations regarding eligibility, no adverse effect, and consultation with the ACHP are reserved to EPA. These determinations, however, can be made by EPA with the assistance of the State.

This section of the compliance manual describes the criteria for determining whether an item is a cultural resource eligible for listing and the site information needed to identify cultural resources. Also described in this section is a recommended approach for collecting the necessary information and considering whether proposed remedial activities will impact cultural resources within the remedy selection process.

3.1.1 Criteria for Evaluation

36 CFR § 60.4 identifies the criteria applied to evaluate whether cultural resources will be eligible for inclusion on the NRHP. The evaluation is based

² The State Historic Preservation Officer is the official responsible for administering the State historic preservation program within each State or jurisdiction (36 CFR 800.2(n)).

upon the quality of significance in American history, architecture, archeology, engineering, and culture that is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association; and

- o That are associated with events that have made a significant contribution to the broad patterns of our history; or
- o That are associated with the lives of persons significant in our past; or
- o That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- o That have yielded, or may be likely to yield, information important in prehistory or history.

3.1.2 Cultural Resource Survey

A "Cultural Resource Survey" (CRS) means the category of activities necessary to identify cultural resources within the project area and, where necessary, to develop the information required to apply the National Register's criteria for evaluation (see section 3.1.1 above). The objective of the CRS is to develop adequate information to make the substantive determinations required by the NHPA.

3.1.3 Needs Determination

The following factors are reviewed in order to determine whether a CRS is necessary. This analysis should be conducted prior to developing the RI/FS Workplan.

- o The type and scope of activity under consideration;
- o The nature and extent of the physical disruption associated with the undertaking;
- o The environmental characteristics of the planning area;
- o The type of direct and indirect impacts anticipated in the planning area;
- o The data gathered from a field inspection of the proposed planning area, including photo-documentation of any potential cultural resources that may be directly or indirectly impacted; and

- o The recommendations of the State Historic Preservation Officer (SHPO) and other appropriate State agencies, and State and local historic preservation groups.

3.1.4 Implementing NHPA Requirements during the CERCLA Cleanup Action

The following sections discuss how the steps in the CERCLA cleanup process provide opportunities to develop the information and make the determinations required under § 106 of the NHPA.

3.1.4.1 Remedial Investigation/Feasibility Study

- o The Workplan

The requirements for the CRS can be incorporated into the RI/FS Workplan. Most of the CRS information from a CRS will be developed during the Remedial Investigation/Feasibility Study (RI/FS). The RI/FS workplan may include scopes of work and schedules for both a Stage I (A&B) Site Recognition Survey and a Stage II Site Definition and Evaluation Survey (described below).

All of these steps may not be necessary nor appropriate for every CERCLA site in order to achieve compliance with NHPA. The objective of these surveys is to have information available regarding cultural resources at various decision points, e.g., when remedial alternatives are discussed during the FS phase, and when making eligibility, mitigation, and data recovery determinations.

- o Stage I Survey

The Stage I survey is designed to determine the presence or absence of cultural resources in the project's potential impact area. The Stage IA work should be conducted early during the planning activities for each project. This allows the information derived from this work to be used in developing and screening remedial alternatives to minimize direct or indirect impacts on historical, architectural, archaeological or culturally significant properties. For the purpose of this survey, the study area is the planning area of the proposed project. To facilitate planning, the Stage I survey may be divided into two logically progressive units of study:

- Stage IA: Literature Search and Sensitivity Study

The Stage IA survey is the initial level of survey and requires comprehensive documentary research designed to identify any known or potential historical, architectural, archeological or culturally significant resources within the project area. A primary objective of the study is to evaluate the sensitivity of the project area for the presence of cultural resources; this information will be used to guide the field investigation that follows. In carrying out the initial search, sources at the State Historic Preservation Office (SHPO), universities, local libraries, museums, historical societies, and

other individuals or organizations with historical and cultural expertise can be consulted as appropriate. Indian Tribes and other appropriate parties may also be a source of information that can be consulted. In addition, the nature and extent of the proposed project is evaluated, an initial walk-over reconnaissance and surface inspection is completed, and the effect of prior ground disturbance on the probability of identifying cultural resources is assessed.

The report resulting from Stage IA should briefly describe the project and its environmental setting with respect to actual or potential cultural resources, identify all properties that are eligible, listed, or being considered for inclusion in the National Register of Historic Places within close proximity to the project area. To further define the potential for unidentified resources, the report should present a synthesis of land use patterns, and prehistoric and historic cultural development of the project area. This information should provide the basis for establishing and ranking zones of cultural resource sensitivity. This synthesis may be particularly useful when screening alternatives, analyzing indirect effects and determining the need for and scope of a Stage IB survey. Areas where substantial prior land modification is evident should be clearly identified. It is appropriate to include materials (e.g., maps, photos, soil boring logs) that support conclusions presented in the text. Further, the Stage IA report will contain recommendations for the subsequent Stage IB survey process.

-- Stage IB: Field Investigation

Subsurface testing is the major component of this level of survey and is recommended unless the presence or absence of resources can be determined by direct observation or by examination of specific documented references.³ Although detailed evaluation of specific resources is not carried out at this level, it is necessary to record and describe sites as fully as possible to aid in the formulation of recommendations for avoidance of further evaluation. The careful location of identified resources with respect to areas of impact of the proposed project must be established.

The final Stage IB report presents the results of the field investigation, including: a description of the survey design and methodology (based on results of the Stage IA); complete records of soil stratigraphy; and an artifact catalogue including identification, estimated data range, and quantity or weight, as appropriate. The locations of all test units must be accurately plotted on a project area map, with locations of identified resources clearly defined. Photographs that illustrate salient points of the survey are a necessary component of the final report. Detailed recommendations and supporting rationale for additional investigation must be incorporated into the conclusions of the Stage IB study.

³ See Department of Interior standards and guidelines on archaeology and historic preservation, 48 FR 190 (September 29, 1983).

If all cultural resources identified through the Stage IA and/or Stage IB surveys will not be impacted by the proposed project, the survey process is complete. If cultural resources identified by these studies are within the proposed impact area, further evaluation may be required to determine the potential eligibility of the resources for inclusion in the National Register of Historic Places. The extent of additional cultural resource study may be reduced by project modifications (e.g., realignment or relocations) that avoid or minimize potential impacts.

-- Review of Stage I findings

The schedule for the CRS should provide for lead agency review of the Stage I survey results and sufficient opportunity for the completion of a Stage II survey before completion of the RI fieldwork. The lead agency will evaluate the Stage I survey results to determine the need for, and refine the scope of, a Stage II survey.

o Stage II Survey: Site Definition and Evaluation

The Stage II survey is a detailed evaluation of an identified cultural resource(s) that may be affected by the remedial alternatives being considered. Research is carried out on each identified resource to provide adequate data to allow a determination of the resource's eligibility for listing in the National Register of Historic Places (see next section). The Stage II report should include, at a minimum, information on boundaries, integrity and significance of the resource(s), and evaluation of the impact of the proposed project, as well as any additional data necessary to evaluate eligibility.

The Stage II survey results will provide the lead agency with sufficient information to determine both impacts and the need for mitigation. The data from the CRS should be incorporated into the RI/FS environmental analysis and the reports should be appended to the document. EPA can utilize these analyses in the preparation of the Record of Decision.

o Determination of Eligibility

EPA, in consultation with the SHPO, shall apply the criteria for inclusion described in Section 3.1.1 above in order to determine whether a cultural resource meets the criteria for inclusion on the National Register. If both the lead agency and the SHPO agree on eligibility, EPA should prepare appropriate documentation according to the Department of Interior guidelines for eligibility (see 36 CFR 63). This documentation should include the SHPO's written opinion regarding eligibility. EPA should transmit the documentation to the Keeper of the National Register. If a question exists or the lead agency and the SHPO do not agree on eligibility, the documentation should be forwarded to the Keeper for a determination.

o Impact Evaluation

After the appropriate CRS studies have been accomplished, one of the following determinations of the effect of the proposed remedial activities on all National Register listed and eligible resources identified in the project area shall be made by EPA in consultation with the SHPO. An effect occurs when an undertaking changes the integrity of location, design, setting, materials, workmanship, feeling or association of a cultural resource eligible for listing. Both direct and indirect effects should be considered.⁴

-- Determination of no effect

If it is determined that there is likely to be no effect on eligible resources, then no further review is necessary.

-- Determination of no adverse effect

If there will be an effect on a resource which is listed or eligible for listing on the National Register, EPA in consultation with the SHPO, shall determine the nature of the effect by applying the "Criteria of Adverse Effect" (see next section). If a determination of no adverse effect is made, EPA shall prepare adequate documentation for this determination for submittal to the Advisory Council.

Effects of an undertaking that would otherwise be found to be adverse may be considered to be not adverse when both the nature of the impact is limited and appropriate data recovery (see mitigation section below) is implemented. For example, a data recovery program may be applied to an archaeological site whose primary significance lies in its ability to yield information important to history.

-- Determination of adverse effect.

An adverse effect is an alteration to a National Register or eligible property that detracts from those characteristics of that resource by which it was determined eligible for the Register. The criteria of adverse effect (36 CFR § 800.9(b)) include, but are not limited to the following:

- o Destruction or alteration of part or all of the property;
- o Isolation from or alteration of property's surrounding environment;

⁴ Direct effects are caused by the activity and occur at the same time and place. Indirect effects include those caused by the activity that are later in time or further removed in distance, e.g., changes in patterns of land use population, density or growth.

- o Introduction of elements that are out of character with the resource or that alter its setting;
- o Neglect of a resource that results in its deterioration; and
- o Transfer or sale of a property without adequate conditions regarding preservation, maintenance, or use.

If it is determined that a remedial activity conducted off-site has the potential to adversely affect a National Register or eligible resource or if the Advisory Council objects to a determination of no adverse effect, the lead agency shall prepare the required documentation (36 CFR § 800.8) (it is recommended that EPA comply with these requirements, where possible, for on-site activities). This documentation will contain the lead agency's proposals to avoid or mitigate the adverse effects of a project upon a National Register or eligible resource and shall be submitted to the Advisory Council. The Advisory Council will consult with EPA, the SHPO and other interested parties in examining all feasible alternatives that would avoid adverse effects on National Register or eligible resources. Generally, the formal consultation should result in a resolution of any adverse effects.

When agreement is reached regarding an action or an alternative conducted off-site, the Advisory Council will participate in the preparation of a Memorandum of Agreement (MOA) reflecting such concurrence. EPA or the lead agency shall not take or authorize any action off-site having an adverse effect on such cultural resources until all reasonable alternatives have been examined and the Advisory Council has accepted a MOA or has commented on the lead agency's report.

o Mitigation

Where EPA determines that the alternative to avoid an adverse effect on a National Register or eligible resource is not feasible, measures to minimize the potential effects should be developed in consultation with the SHPO, the Advisory Council and, where appropriate, other parties. A mitigation plan outlining these measures should be included in an MOA signed by the consulting parties.

Mitigation should be applied only to those cultural resources directly affected by the proposed undertaking. Mitigation shall be commensurate with the nature and importance of the cultural properties and the extent to which they are affected by the project. The total cost of the undertaking shall also be considered.

If a mitigation plan is developed, it shall be based on engineering, environmental, economic, and resource preservation concerns. Mitigation may take the form of avoidance through cost-effective redesign, reduction of the direct impact on the resource, and/or data recovery prior to construction.

3.1.4.2 Record of Decision

The Record of Decision (ROD) should include the results of the CRS process and incorporate, as necessary, recommendations on the eligibility of the identified cultural resources for the National Register and the impact, if any, of the alternatives described in the ROD on such resources.

3.1.4.3 Remedial Design

The remedial design process should provide for the scheduling and funding of the development and implementation of a detailed cultural resources mitigation plan (date recovery, recordation, construction constraints, etc.) EPA will be responsible for obtaining final SHPO and ACHP approval of any mitigation plan that involves alteration or destruction of identified significant resources located off-site. In general, it will be advantageous to carry out data recovery activities prior to construction; however, provisions may occasionally be necessary to schedule such work to occur during construction.

3.2 COMPLIANCE WITH THE ENDANGERED SPECIES ACT

3.2.1 Overview of the Endangered Species Act

The Endangered Species Act (ESA) of 1973, 16 USC § 1540 *et seq.*, provides a means for conserving various species of fish, wildlife, and plants that are threatened with extinction. The ESA defines an endangered species as "any species that is in danger of extinction throughout all of a significant portion of its range...." In addition, the ESA defines a threatened species as "any species that is likely to become an endangered species within the foreseeable future...." Further, the ESA provides for the designation of critical habitats, that are "specific areas within the geographical area occupied by the (endangered or threatened) species... on which are found those physical or biological features essential to the conservation of the species..."

Section 7(a) of the ESA requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their critical habitats. Actions that might jeopardize listed species include direct and indirect effects, as well as the cumulative effects of other actions that are interrelated or interdependent with the proposed action.

If listed species, or their habitat, will be affected by a proposed project, consultation between the agency acting on the project and the appropriate wildlife agency (i.e., the U.S. Fish and Wildlife Service (FWS) for terrestrial and freshwater species, and the National Marine Fisheries Service (NMFS) for marine species) must be undertaken for off-site actions and are strongly recommended for cleanup actions conducted entirely on-site. Consultation is required to determine whether the project is likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction

or adverse modification of a critical habitat. Section 7 of the ESA requires that specific procedures be followed in order to make this determination. Procedures for interagency cooperation under the Act are also detailed in 50 CFR Part 402.

3.2.2 ESA Review Procedures

3.2.2.1 Request for Information (Informal Consultation)

As early as possible in the remedial planning process, EPA should prepare a written request to the appropriate office(s) of the FWS and the NMFS requesting a determination of whether there are listed or proposed species or critical habitats present in the study area. A written request for information initiates early consultation. The location and type of project and a map of the planning area for each project should be included with the letters to the FWS and NMFS, as appropriate.

The FWS and NMFS are required to respond within 30 days of the receipt of such a request. If the FWS and NMFS determine that no listed or proposed species are present in the study area, no further consultation with these agencies is required. Results of the early consultation process should be included in the RI/FS.

Early consultation under the ESA can also be conducted on many projects at one time. In addition, certain FWS regional offices may provide lists of Federal endangered and threatened species and critical habitats on a State-by-State basis, that can help to expedite the review process. Requests for bulk informal consultations and State species lists should be forwarded to the respective FWS regional office.

3.2.2.2 Biological Assessment

A determination, during early consultation, that an endangered species or critical habitat is present, and may be impacted by off-site activities, will necessitate preparation of a biological assessment (BA). The intent of the BA is to examine any possible impacts of a proposed action upon the affected species or critical habitats in the project area. The BA should include the following:

- o Views of wildlife experts;
- o Review of literature and field data to determine likely locations of critical habitat;
- o Results of on-site inspection of the total area affected (conducted in accordance with the site's Health and Safety Plan) to determine the presence or absence of affected species and/or critical habitat;

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- o Analysis of the likely effects of the proposed project on the species in terms of individuals (short-term impacts) and populations (long-term impact);
- o Analysis of alternative actions to protect endangered species; and
- o Description of the study methodology.

Prior to the implementation of any of these tasks, it is recommended that the specific scope of the BA be approved by the appropriate FWS or NMFS office(s).

The BA must be completed within 180 days after initiation unless an extension is granted. Based upon the BA conclusions, EPA, in consultation with the FWS or NMFS, must determine the next appropriate action.

- o If EPA determines the project will not affect any listed or proposed species, EPA will supply the appropriate area manager or regional director of the FWS or NMFS with that determination and the completed BA. Unless FWS and NMFS disagree with EPA's determination of no effect, EPA's endangered species responsibilities under Section 7 of the ESA have been met. Results of EPA's determination of no effect and documentation of appropriate coordination must be presented in the RI/FS.
- o If EPA anticipates that the project will affect a listed or proposed species, EPA must request a biological opinion (BO) by initiating the formal consultation process with the appropriate regional office(s) of FWS and NMFS. If a BO is required, no action can be approved until the formal consultation process is completed and documented in an RI/FS.

3.2.2.3 Biological Opinion (Formal Consultation)

EPA initiates formal consultation by requesting a BO from the appropriate wildlife agency. The requests must include a copy of the BO with any information on the proposed project and project alternatives. The FWS and/or NMFS are required to render the BO within a 90-day period that can only be extended by mutual consent of the Federal agencies involved. The BO can conclude that:

- o The proposed action is not likely to jeopardize or adversely affect the species or critical habitat. No further action is required and the proposed project can

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proceed; the results of the formal consultation must be included in the RI/FS.

- o The proposed action is likely to jeopardize or adversely affect an endangered species or critical habitat. In this case, the project must be stopped unless alternatives to avoid or mitigate any impact to the species or critical habitat can be found, or an exemption is granted by the Endangered Species Committee through formal consultation procedures.

3.2.2.4 Application for Exemptions

The procedures for applying for Endangered Species Act exemptions are found in 50 CFR Parts 450, 451, 452 and 453 and are summarized below.

If the biological opinion results in a determination of adverse effect (jeopardy to species or adverse modification of habitat), and there are no reasonable or prudent measures that can be taken to avoid or mitigate impacts from off-site activities, EPA may submit an application for exemption from the Section 7(a)(2) requirement. The application must be sent to the Secretary of Interior or Secretary of Commerce, as appropriate, within 90 days following the termination of the consultation process. The exemption application must contain the following information:

- o Comprehensive description of the proposed Agency action;
- o A description of the consultation process carried out under the Act;
- o A copy of the biological assessment;
- o A copy of the biological opinion;
- o A description of the alternatives considered;
- o A statement describing why the proposed Agency action cannot be altered or modified to avoid violating Section 7(a)(2) of the Act.
- o A description of resources committed by the Federal Agency, if any, to the proposed action subsequent to the initiation of consultation.

The Secretary will conduct a threshold review of the application and determine, within 20 days, whether the application qualifies for consideration by the Endangered Species Committee. If it is determined that all the consultation requirements have been met by the Agency, the Secretary will submit a report to the Endangered Species Committee within 140 days. The Endangered

Species Committee is composed of: the Secretary of the Interior, the Secretary of Agriculture, the Secretary of the Army, the Chairman of the Council of Economic Advisors, the Administrator of the Environmental Protection Agency, the Administrator of the National Oceanic and Atmospheric Administration, and a person from each affected State as determined by the Secretary.

It should be noted that applying for an Endangered Species Act Exemption is a lengthy and detailed process involving hearings before an Administrative Law Judge. The process has been carried out on only a few cases in the history of the Endangered Species Act.

3.2.3 Discussion

Provided that appropriate consultation is initiated in a timely manner, it is unlikely that the provisions of the ESA will cause a delay in a remedial project. Moreover, because of the nature of the remedial program (i.e., the cleanup of environmental contamination), it is very unlikely that the ESA review process will result in a project being delayed or stopped because of adverse impacts to endangered or threatened species or critical habitats. (The vast majority of projects will not require anything further than informal consultation.) However, if serious impacts could result from a remedial action, the provisions of natural resource damage assessments and claims of CERCLA/SARA (i.e., 43 CFR Part 11) would likely be initiated by the appropriate Trustee. In such cases, an agreement may be reached with the respective Trustee that will allow appropriate remedial action "operable units" to proceed to ensure the protection of public health.

3.3 GUIDANCE FOR COMPLIANCE WITH THE WILD AND SCENIC RIVERS ACT OF 1968

3.3.1 Overview of the Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act, 16 USC § 1271, et seq., establishes requirements applicable to water resource projects affecting wild, scenic or recreational rivers within the National Wild and Scenic Rivers system, as well as rivers designated on the National Rivers Inventory to be studied for inclusion in the National System. In accordance with Section 7 of the Act, a Federal agency may not assist through grant, loan, license or otherwise, the construction of a water resources project that would have a direct and adverse effect on the free-flowing, scenic and natural values for which a river on the National System or Study River on the National Rivers Inventory was established. The Act does not prohibit authorizing construction of water resources projects below or above rivers or their tributaries that are in the National System or being studied on the National Rivers Inventory, so long as the project would not invade the area, or unreasonably diminish the scenic, recreational and fish and wildlife values present in the area.

The Act is administered by the Department of Interior (DOI) and the Department of Agriculture (DOA). Applicable consultation requirements are found in Section 7 of the Act. The Department of Agriculture has promulgated

implementing procedures at 36 CFR Part 297 for rivers within its jurisdiction.

3.3.2 Summary of Wild and Scenic Rivers ARARS for CERCLA Actions

The Wild and Scenic Rivers Act requires that the lead agency:

- o Identify any rivers within the National Wild and Scenic Rivers system or Study River on the National Rivers Inventory within a Federal project area;
- o Determine if a project would involve construction of any water resources project that could affect the free-flowing characteristics, the scenic, or natural values of a designated river; and
- o Not authorize any water resources project that would directly impact any designated river without notifying the Secretary of the Interior or Chief of the Forest Service (whoever has jurisdiction) in writing at least 60 days prior to the date of the proposed actions.

A water resources project is defined as a dam, water conduit, reservoir, powerhouse, transmission line, discharge to waters, or other project works under the Federal Powers Act or other construction of developments that would affect the free-flowing characteristics of a Wild and Scenic River or Study River. The statute further provides that the Secretary of Agriculture or Secretary of the Interior will make a determination as to the effect of the project on the designated river and will either consent or not consent to the project. If consent is denied, the Secretary may recommend measures to eliminate adverse effects.

If on-site cleanup activities involve the potential to impact a designated river, the lead agency is strongly encouraged to notify and consult with DOI and DOA in determining whether the project is considered a water resources development project, whether to proceed with the activity, and how to eliminate direct and adverse effects. For off-site activities, the lead agency must notify DOI or DOA and obtain consent before implementing an action that would directly and adversely impact a designated river.

3.4 **GUIDANCE FOR COMPLIANCE WITH THE FISH AND WILDLIFE COORDINATION ACT OF 1934**

3.4.1 **Overview of the Fish and Wildlife Coordination Act of 1934**

The Fish and Wildlife Coordination Act of 1934, 16 USC § 661 et seq., was enacted to protect fish and wildlife when Federal actions result in the control or structural modification of a natural stream or body of water. The statute requires Federal agencies to take into consideration the effect that water-related projects would have upon fish and wildlife and then take action to prevent loss or damage to these resources. Such action should be viewed in the

context of obtaining maximum overall project benefits, i.e., cleaning up the site. Under Section 662 of the Act, consultation is required with the Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) and the Wildlife Resources Agency of the State wherein alteration of the water resource would occur as a result of off-site remedial activities. The purpose of developing measures to prevent, mitigate or compensate for project-related losses to fish and wildlife. Any reports or recommendations of the FWS and the State should be incorporated into the RI/FS. Projects involving impoundments of less than ten acres are exempted from the requirements under the Act.

3.4.2 Summary of Fish and Wildlife ARARS for CERCLA Actions

In planning a response action, the lead agency must determine whether the action will result in the control or structural modification of a body of water. The types of actions that would fall under the jurisdiction of the Act include:

- o Discharges of pollutants including industrial, mining and municipal wastes or dredge and fill material into a body of water or wetlands; and
- o Projects involving construction of dams, levees, impoundments, stream relocation, and water diversion structures.

If a response action would involve any of these activities, the lead agency must develop measures to prevent, mitigate or compensate for project-related losses of wildlife resources.

The statute requires consultation with the Fish and Wildlife Service and the affected State for developing measures to protect wildlife. Consultation can be carried out with the field offices of the Fish and Wildlife Service. Consultation is required for off-site response actions and is strongly encouraged for cleanup actions taking place entirely on-site. The RI/FS should include any reports or recommendations of the FWS.

3.5 GUIDANCE FOR COMPLIANCE WITH COASTAL ZONE MANAGEMENT ACT

3.5.1 Overview of the Coastal Zone Management Act

Section 307(c)(1) of the Coastal Zone Management Act (CZMA), 16 USC § 1451 et seq., requires that Federal agencies conducting or supporting activities directly affecting the coastal zone conduct or support those activities in a manner that is, to the maximum extent practicable, consistent with approved State coastal zone management programs. If a remedial activity would affect the coastal zone area and the State has an approved coastal zone management program, the lead agency is required to determine whether the activity would be consistent, to the maximum extent practicable, with the program. Federal agencies must notify States of their consistency determinations in accordance

with procedures promulgated by the National Oceanic and Atmospheric Administration, the Office of Coastal Zone Management, in 15 CFR 930.

Copies of State management plans may be obtained from the coastal commission of each State. The following States do not have approved State management plans: Georgia, Texas, Ohio, Indiana, Illinois and Minnesota.

The term "coastal zone" is identified in the Act as "the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines of the several coastal States, and includes islands, transitional and intertidal areas, salt marshes, to the international boundary between the United States and Canada and in other areas, seaward to the outer limit of the U.S. territorial sea. The zone extends inland from the shorelines only to the extent necessary to control shorelands, the uses of that have a direct and significant impact on the coastal waters."

3.5.2 Summary of Potential Coastal Zone Management Act ARARS for CERCLA Activities

To comply with the CZMA, the lead agency should undertake the following:

- o Identify remedial activities that would directly affect the coastal zone;
- o Review the State coastal zone management plan and determine whether remedial activities would be consistent with the plan;
- o Prepare a consistency determination (or its equivalent for on-site activities) that includes:
 - A detailed description of the remedial action, its associative facilities and coastal zone effects;
 - A brief statement on how the remedial action, to the maximum extent practicable, would be consistent with the State coastal zone management plan;
 - Data to support the consistency determination;
- o Incorporate the consistency determination, or its equivalent, in the RI/FS.

3.5.2.1 Off-Site Activities

For off-site remedial actions, the lead agency should notify the responsible State agency of its consistency determination as early as possible in the planning process (when sufficient data is available) but before the lead agency reaches a significant point in the decision making, i.e., at least 90 days before final approval of the remedial action. The consistency determination does not have to be in any particular format as long as all the substantive information is included.

State agencies are required to respond to a consistency determination within 45 days from receipt of notice. If a State fails to provide a response the lead agency should assume State agreement. An off-site remedial activity may not be taken sooner than 90 days from issuance of a consistency determination unless both the lead agency and the responsible State agency agree to an alternative period.

If the State agency disagrees with a consistency determination the State will respond with its reasons for disagreeing and provide supporting documentation. The response will address how the activity will be inconsistent with specific elements of the coastal zone management plan and alternative measures that can be undertaken to allow the activity to proceed consistent with the management program.

When disagreement occurs, the lead agency and responsible State agency should utilize the remaining portion of the 90-day notification period to resolve their differences. If disagreement continues, the 90 period may be suspended until the disagreement is resolved. Of note is that the lead agency would not have to delay or abandon implementation of the response action identified by the State as inconsistent with the coastal program as long as the lead agency continues to maintain that the action is consistent, to the maximum extent practicable, with the coastal program.

There are a number of procedures for resolving State/Federal conflicts. These include:

- o Informal discussion between the parties, assisted by the Department of Commerce, Office of Coastal Zone Management;
- o Mediation by the Secretary of Commerce with public hearing; and
- o Judicial review by either party.

3.5.2.2 On-site activities

Under CERCLA, on-site actions are not subject to administrative review processes. However, it is the lead agency's responsibility to ensure that on-site actions will comply with all of the substantive requirements under a

State's coastal zone management plan. It is recommended that the lead agency document that substantive requirements will be met by developing an analysis similar to a consistency determination. The lead agency is strongly encouraged to consult with the State coastal zone management agency in determining whether substantive requirements will be met.

3.6 GUIDANCE FOR COMPLIANCE WITH THE WILDERNESS ACT

The Wilderness Act, 16 USC §§ 1131 et seq., creates the National Wilderness Preservation System. The intent of the law is to administer units of this system (i.e., Wilderness Areas) in order to preserve their wilderness character and to leave them unimpaired for future use as wilderness.

In complying with the Wilderness Act the RPM must first identify whether proposed remedial activities will impact designated wilderness areas. The Regional NEPA compliance staff should be able to identify these areas. If a proposed remedial activity will impact a wilderness area, the RPM should consult with the NEPA compliance staff and the administering agency to determine the prohibitions on activities in the wilderness area and whether exemptions to these prohibitions are necessary and can be obtained. For example, the RPM may have to implement a remedial activity which uses temporary structures and roads only or which uses only certain kinds of equipment.

3.7 GUIDANCE FOR COMPLIANCE WITH THE COASTAL BARRIERS RESOURCES ACT

Section 3503 of the Coastal Barrier Resources Act, 16 USC §§ 3501 et seq., establishes a Federally-designated Coastal Barrier Resources System consisting of undeveloped coastal barriers (i.e. unconsolidated sedimentary materials subject to wave, tidal, and wind energies, and that protect the landward aquatic habitats from direct wave attack. This includes all associated wetlands). The Act also implements protective regulations against damage to fish, wildlife, and other natural resources associated with the coastal barriers in the system by limiting Federal expenditures that will have the effect of developing any coastal barrier unit.

In complying with the Coastal Barriers Resources Act, the RPM must first identify whether proposed remedial activities will impact a designated coastal barrier, i.e., one within the system. The Regional NEPA compliance staff should be able to identify such areas. If a proposed activity will impact a designated coastal barrier, the RPM should consult with the NEPA compliance staff and the administering agency to determine the prohibitions on activities in the coastal barrier and whether exemptions to these prohibitions are necessary and can be obtained.

CHAPTER 4

STATUTES WITH POSSIBLE ARARs FOR
MINING, MILLING, OR SMELTING SITES4.1 GUIDANCE FOR COMPLIANCE WITH THE URANIUM MILL TAILINGS RADIATION CONTROL ACT

The Uranium Mill Tailings Radiation Control Act (UMTRCA), enacted in 1978, mandates EPA to promulgate regulations providing for the stabilization, disposal, and control of residual radioactive materials (uranium mill tailings) at designated uranium processing or depository sites. Although EPA is charged with setting the standards, Department of Energy (DOE) is the lead agency responsible for carrying out the cleanup and disposal of tailings at inactive Uranium Mill Tailings sites. The Nuclear Regulatory Commission (NRC) must oversee DOE's implementation of EPA's regulations and approve the sites once cleanup has been completed.

In response to the mandate given under Title I of UMTRCA, EPA developed two very similar programs. The first program sets standards for remedial actions at sites not licensed by the NRC (inactive uranium processing sites), and the other program establishes standards for sites licensed by the NRC (active uranium processing sites). The programs are almost identical in content, with the only difference being the standards promulgated for ground-water protection. Each program employs a three-pronged approach to remedial actions at mill tailings sites: 1) standards of long-term control, 2) standards of cleanup, and 3) supplemental standards. These standards are applicable to designated uranium tailings sites and may be relevant and appropriate for other CERCLA sites that are not designated and contain uranium tailings and CERCLA sites that contain other radioactive materials (e.g., radium).

4.1.1 Summary of UMTRCA ARARs for CERCLA Actions

UMTRCA establishes control and cleanup standards. Control operations aim to place the tailings piles in a condition that will minimize the risk to human health over a long period of time. Cleanup operations are intended to reduce the potential health consequences of tailings that have been dispersed from tailings piles by natural causes (e.g., erosion) or by man.

4.1.1.1 Control of Residual Radioactive Materials for Inactive Sites

40 CFR 192, Subpart A establishes standards for the long-term integrity of the control systems. The purpose of these standards is to provide long-term stabilization and isolation in order to inhibit the spreading of residual radioactive materials, control releases of radon to the air, and protect both surface and ground water.¹

¹ The term "residual radioactive material" means tailings and other waste that result from the processing of ores for the extraction of uranium.

The regulations require that control measures be carried out in a manner that provides reasonable assurance that they will last, to the extent reasonably achievable, up to 1,000 years and for a minimum of 200 years. Control measures must also be designed to ensure that releases of radon-222 from residual radioactive material to the atmosphere will not exceed an average (applied over the) release rate of 20 picocuries per square meter per second, or increase the annual average concentration of radon-222 in the air at or above any location outside the tailings pile by more than one-half picocurie per litre.

"Reasonable assurance" that control measures will be effective over the required time period hinges on the design of the control system. When controls are being designed, site managers and engineers should analyze the physical properties of the site, project the impact of natural processes over time, and estimate how well and how long the proposed control mechanism will function in relation to these factors. Local or temporary phenomena (e.g., local cracking or burrowing of animals) need to be taken into account if their cumulative effect would negatively affect compliance with the promulgated standards.

4.1.1.2 Standards for Cleanup of Land and Buildings Contaminated with Uranium Mill Tailings at Inactive Sites

Cleanup standards for contaminated land are based on radium-226 levels in the soils. Radium-226 is the most difficult radioactive isotope to remove. If radium-226 levels are controlled, it is likely that all other radioactive isotopes have also been brought to safe levels. Cleanup levels for contaminated buildings are based on radon decay products in the buildings.

Permissible levels of radium-226 vary with soil depth. After cleanup the top 15 cm of soil cannot exceed a contamination level of 5 pCi/g. Subsurface contamination cannot exceed 15 pCi/g (averaged over any 15 cm layer of soil).

Tailings transported by man (e.g., not windblown) to other locations require cleanup to the levels described above only if the amount and location of the tailings present a clear current or future hazard. Site location, proximity to people, climate, average wind velocity, and threat of ground-water contamination are criteria that may be used to measure risk.

Remedial programs for contaminated buildings must attempt to achieve an indoor radon decay product concentration of 0.02 WL, in no event to exceed 0.03 WL. No specific finding of the need for an exemption is necessary.

4.1.1.3 Supplemental Standards

Subject to oversight and notification procedures, alternative standards may be established under 40 CFR 192.22 that permit the selection and performance of remedial actions that come as close as possible to meeting the more stringent standards (40 CFR 192.02, 192.12). This procedure applies when any of the following six criteria (40 CFR § 192.21) are satisfied:

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- (1) There is unreasonable risk of injury to workers;
- (2) Remedial actions would produce environmental harm to persons on or near the site that is clearly excessive relative to the benefits of the action;
- (3) The cost of the remedial action is unreasonably high;
- (4) There is no known remedial action; or
- (5) The presence of radionuclides, other than radium 226, exists in sufficient quantities to constitute a significant radiation hazard.

4.1.1.4 Contamination of Water

Ground-water standards are currently established for active sites only. CERCLA actions taken at inactive sites shall consider whether the ground-water protection standards regulations established for active sites are relevant and appropriate to cleanup of an inactive site.

4.1.1.5 Active Sites

The active site rule, 40 CFR 192.32(a)(2), protects ground water by incorporating the Solid Waste Disposal Act (SWDA) rules² and RCRA provisions specifying acceptable levels of hazardous constituents. The primary standard requires the use of liners at all new waste storage areas (whether they are new waste facilities or expansions of existing piles). The secondary standard establishes the hazardous constituent concentration standards for health and environmental protection.³ Monitoring wells should be located at the edge of the tailings piles. Corrective action to restore ground water to its background quality within 18 months of a determination of noncompliance is mandatory.

4.1.2 Future Potential ARARS for Radioactive Materials

Proposed standards are being developed that may be potential ARARs when finalized. The following is a brief summary of the proposed regulations:

- o EPA is writing new standards for ground-water protection at inactive mill tailing sites under UMTRCA.

² 40 CFR 264.92.-264.99, 264.111, 264.221, 264.226, 264.228.

³ 40 CFR 264.92-264.94.

- o EPA is developing general public health and environmental radiation protection criteria for cleanup of active facilities, where radioactive materials have been used, when those facilities are decommissioned (e.g., power plants, DOE fuel reprocessing facilities).

4.1.3 Coordination Between CERCLA (Superfund) and Radiation and Water Offices

If a remedial or response action is to occur at an active or inactive uranium mill tailings processing site, it is recommended that RPMs consult with EPA's Radiation Programs, because of their expertise in administering the cleanup and disposal operations. In certain situations, the radiation program may consult with the Nuclear Regulatory Commission and the Department of Energy. Moreover, communication between RPMs and the Office of Water is recommended in developing ground-water protection standards.

4.2 SURFACE MINING CONTROL AND RECLAMATION ACT

The Surface Mining Control and Reclamation Act (SMCRA), 30 USC §§ 1201 et seq., establishes a nationwide program for the protection of human health and the environment from the adverse effects of surface coal mining operations, current and past. Pursuant to the Act, the Department of Interior, Office of Surface Mining (OSM), has promulgated standards for surface mining activities (40 CFR Part 816) that may be relevant and appropriate to mining sites on the NPL. Requirements under SMCRA are not applicable because, as a matter of policy, EPA has determined that only non-coal mining sites will be considered for cleanup under CERCLA.

In determining whether OSM standards may be relevant and appropriate, the RPM should compare whether the material found at the mining site is similar to coal, whether the geologic and other conditions at the mining site are similar to those addressed by the standards under 40 CFR Part 816, and whether the problems to be remedied are similar to those contemplated by 40 CFR Part 816 (e.g., acid mining drainage). Examples of OSM requirements to be reviewed for relevance and appropriateness include those relating to topsoil and subsoil (§ 816.22), hydrologic-balance protection (§ 816.41), sediment control measures (§ 816.45), back filling and grading (§ 816.102) and revegetation (§ 816.111).

Requirements from other statutes may also be ARAR for mining sites depending on the particular circumstances at a site. For example, the standard for ground-water cleanup may be MCLs under the Safe Drinking Water Act (see Volume II, Chapter 3) or the standard for capping of a site may be that under RCRA (see Volume 1, Chapter II) rather than under SMCRA. State standards for cleanup of abandoned coal mines may also be ARAR depending upon the circumstances at a particular site.

4.3 USE OF RCRA REQUIREMENTS AT MINING WASTE SITES

EPA is developing a program under RCRA Subtitle D for the management of wastes from the extraction, beneficiation, and processing of ores and minerals. It is anticipated that this special Subtitle D program will address facility development, operation, closure and post closure maintenance. Any standards related to cleanup under the program are expected to become ARARs for Superfund cleanup actions.

Until these regulations are finalized, Superfund will continue to address mining waste problems through the RI/FS and ROD taking into account current Subtitle D requirements as well as options for addressing risks not addressed by Subtitle D requirements. The technical requirements of Subtitle C regulations may be considered during the initial review of remedial alternatives (see Volume 1, Chapter 2).

CHAPTER 5

OTHER STANDARDS RELATED TO THE CLEANUP ACTION

5.1 GUIDANCE FOR COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REQUIREMENTS

The Occupational Safety and Health Administration (OSHA) has promulgated a comprehensive set of occupational health and safety standards. These regulations take a two-pronged approach to worker safety by establishing safe working practices, as well as safe levels of exposure to a variety of materials.

Section 126(a) of the Superfund Amendments and Reauthorization Act (SARA) mandates the Secretary of Labor to publish protection requirements for workers engaged in hazardous waste operations. These standards are promulgated in 29 CFR 1910 and were adopted from the EPA manuals entitled Health and Safety Requirements for Employees Engaged in Field Activities, EPA, (July 1981), and Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, OSHA/EPA/USCG/NIOSH, Publication No. 85-115 (October 1985). The health and safety standards regulate training, protective equipment, proper handling of wastes, monitoring of employee health, site information, and emergency procedures.

OSHA includes many other health and safety standards that may be applicable or relevant and appropriate depending on the situation and actions being taken under CERCLA. Standards are promulgated in 29 CFR 1926.53-.58 and 10 CFR 20.101-.108 for ionizing radiation, asbestos, tremolite, anthophyllite, and actinolite. 29 CFR 1910.55 establishes rules regarding the use of protective equipment for gases, vapors, fumes, dusts, and mists. 29 CFR 1926.52 addresses protection of workers from noise exposure.

Also, 40 CFR Part 763, Subpart G, describes worker protection requirements that must be followed during asbestos abatement projects by State and local government employees not otherwise covered. These requirements should be reviewed when a CERCLA action involves abatement or demolition of an asbestos hazard.

States with their own OSHA-approved occupational and health plans must develop standards comparable to the hazardous waste regulations. EPA is working on similar requirements for States without OSHA-approved programs.

5.2 GUIDANCE FOR COMPLIANCE WITH REGULATIONS REGARDING TRANSPORTATION OF HAZARDOUS WASTES

Sections 3002 and 3003 of RCRA directs EPA to develop standards applicable to transporters of hazardous wastes as may be necessary to protect human health and the environment. This Section states that these standards must be consistent with the standards for intrastate and interstate transportation of hazardous materials developed by the Department of Transportation (DOT) under

the Hazardous Materials Transportation Act, 49 U.S.C. Section 1801 et seq. The regulations regarding transportation developed under RCRA are codified at 40 CFR §§ 265.1 and 260.10. DOT's regulations are codified at 49 CFR Parts 100 through 199.

A Guidance Manual entitled EPA/DOT: Hazardous Waste Transportation Interface (No. SW-935) has been developed to explain the interface which occurs between the EPA and DOT regulations when hazardous wastes are transported. The manual describes standards for labelling, packaging, and shipping papers/manifesting, and specific requirements for transportation for rail, aircraft, vessel, and highway.¹ This manual should be consulted for discussion of requirements related to transportation of hazardous wastes.

¹ The manual does not describe DOT's standards for pipeline transportation because EPA's regulations do not apply to pipeline transportation. Thus, there is no interface in this area.

ATTACHMENT
PROPOSAL FOR IMPLEMENTATION OF NATIONAL HISTORIC
PRESERVATION ACT REQUIREMENTS

To allow for the implementation of this staged approach to CRS evaluation, the EPA will need to enter into a Programmatic Agreement (PA) with the ACHP. Clearly, there are many possible combinations of types of CERCLA remediation activities and CRS responses. This suggests that a matrix describing these relationships could be put together that would indicate in advance appropriate courses of action for a variety of situations. The need for this method lies in the complexity necessary in achieving compliance with the NHPA § 106 process on a case-by-case basis. While considerations of public safety and health are most important, it is the inability to always obtain sufficient information concerning specific cultural resources prior to making commitments to a remedial option that can create some difficulties in complying with the process.

However, revisions have recently been made in the procedures issued by the ACHP concerning the timing of NHPA § 106 compliance (36 CFR 800, Oct. 1, 1986). Previously, it was quite clear that the 106 process was to be carried out before project commitments were made as to the alternative to be selected, whereas the current ACHP regulations note the need to complete the § 106 process only before expenditure of funds on the actual undertaking. Thus, some CRS work can, at times, occur during and after planning or design, assuming that it is based on a prior understanding contained in a PA with the ACHP.

The main concept behind PA is that there are likely to be a number of frequently occurring situations with patterns that can be anticipated with respect to certain types of remediation, and these in turn can be associated with certain kinds of toxic waste concentrations. For example, the use of aeration devices on a polluted well head could be determined to have "no effect" on cultural resources unless unusual conditions existed. The PA might detail this and other situations where a "no effect" could be determined without calling for a CRS. The PA is appropriate where many of the conditions are set and thus a fixed response would be appropriate.

The PA for toxic site capping remediations could perhaps indicate that all such remedial actions would physically affect the ground around the perimeter of the facility -- therefore, the appropriate action would be to carry out the Stage I, Stage II, and an eligibility evaluation, as part of the RI/FS. The mitigation could follow the ROD, since it marks a commitment to the plan (but not to the funds for action), and so is still in compliance with the latest ACHP 106 guidance. The PA could thus trigger specific CRS activities as appropriate. It would be possible to characterize these in a matrix, since there are a limited number of expected types of remediation.

The ACHP will be contacted concerning the development of a PA for the CERCLA program. Discussion with ACHP staff will focus on the timing of eligibility and effect determinations, mitigation development, public participation, and the matrix.